EXHIBIT 11

MERITS REPORT OF ALAN DUCATMAN, M.D.

In the case of Sullivan, et al. v. Saint-Gobain Performance Plastics Company, No. 5:16-cv-000125-GWC (D. Vt.)

1. Introduction

As discussed in my initial expert report issued on September 1, 2017, the contents of which are incorporated by reference into this report, hundreds of drinking water wells in a designated area ("Zone of Contamination") of Bennington and North Bennington, Vermont (together, "Bennington") have been contaminated with Perfluorooctanoic Acid (PFOA) above standards established by the State of Vermont and the US EPA. Additionally, the results of serum (blood) testing conducted by the Vermont Department of Health (DOH) has demonstrated that hundreds of individuals who consumed this contaminated water have above-background levels of PFOA in their serum. Due to this PFOA exposure, these individuals have increased risks of adverse health effects as compared to the background population.

Thus, individuals who have resided in the Zone of Contamination, consumed PFOA-contaminated water, and have above-background levels of PFOA in their blood (collectively "Exposure Class"), have an increased risk for the development of certain illnesses and diseases related to their PFOA exposure. As previously stated, it is my opinion that a medical monitoring program is clinically necessary for this exposed population to detect known PFOA-related disease as early as possible in order to minimize disease and improve health outcomes. In addition to early detection, medical monitoring also addresses the emotional well-being of the population. Participants are provided a means to increase their engagement against adverse, imposed risk, and are allowed to confirm (or refute) and not merely assume the expected outcome, that consumption of consistently delivered water that is not contaminated with PFOA

will lead to gradual improvement of their serum PFOA concentration, reflecting lower body burden.

The purpose of this report is to, based on my significant experience in the evaluation and medical monitoring of humans exposed to PFOA, set forth specific recommendations as to the design and implementation of a clinically appropriate medical monitoring program for members of the Bennington Exposure Class.

2. Qualifications/Materials Reviewed

My qualifications are set out at pages 1-3 of my initial report, and my CV is attached to this report as Exhibit 1.

In preparing this report, in addition to the materials referenced in my first report, I have reviewed the updated (September of 2017) Vermont Department of Health (DOH) Results of Blood Testing and Exposure Assessment Report, numerous ongoing and additional peer reports concerning PFOA (and related perfluoroalkyl substance chemicals), many of which are set out in Exhibit 2, as well as current literature about early disease detection and intervention, medical screening guidelines, as well as literature about actual provider/patient consistency with recommendations. The goal of this review is to consider what kind of monitoring program is most helpful and useful in early identification of the specific diseases for which monitoring is recommended, supportive of positive health outcomes, and not duplicative of services that participants would otherwise normally receive.

3. Purpose and Overview of Medical Monitoring Program

The purpose of the medical monitoring program described herein is to detect certain known PFOA-related diseases as early as possible in order to minimize disease and improve health outcomes for participating Class members. The program is designed to provide

participating Exposure Class members with targeted diagnostic monitoring – through annual survey questionnaires and meaningful clinical testing – that results in improved quality of life due to earlier detection and identification of certain diseases for which they are at known higher risk due to their PFOA exposure. These diseases include kidney and testicular cancer, pregnancy complications (pregnancy induced hypertension, thyroid disease during pregnancy, shortened duration of breast-feeding), thyroid disease (non-pregnancy), liver disease, hyperlipidemia, uric acid abnormalities and higher risk of gout, and ulcerative colitis. The program is meant to detect, but not treat, these specific diseases; any treatment, when warranted, will result from a referral of the participating Class member by the program physician to a treating physician and/or personal medical care provider. During the initial screening year of the program, it is anticipated that it will take three (3) months to complete the program protocols, and two (2) months to do so in each subsequent surveillance year. The program will last for a total duration of thirty (30) years.

The program is designed to detect only the specific diseases listed above known to be related to PFOA exposure, and the diagnostic monitoring is specifically targeted to achieve this purpose. Thus, the program's diagnostic monitoring protocol is inherently different from what a participating Class member would receive should the participant receive regular medical care. The program will provide participating Class members with earlier detection of these diseases as opposed to what *might* have been detected by routine physician visits and general screening guidelines, as this early detection of PFOA-related disease is not readily available in the medical community at-large, given that few clinicians are familiar with the effects of environmental toxins, and PFAS in particular, in any detail. Further, the program will engage clinician(s) from within the community and increase awareness, and will allow Class members to improve health

outcomes as compared to routine physician visits.

4. Human Health Risks Associated With PFOA Exposure

Based on multiple peer-reviewed publications reporting results from exposed communities in the United States and around the world, and from governmental publications and assessments, we know to a reasonable degree of medical certainty that human exposure to PFOA leads to increased health risk. In my initial expert report, I listed, with supporting citations, an illustrative, non-exhaustive list of adverse health effects in humans known to be associated with above background levels of PFOA. These included the conditions which can benefit from medical monitoring, discussed below, as well as conditions for which medical monitoring may not add immediate benefit to population, health, such as immune suppression, asthma, developmental and neurodevelopmental abnormalities, prostate cancer, fecundity, and osteoarthritis. For purposes of this report, I review below the ample literature and experimental data demonstrating that human exposure to PFOA results in an increased risk for the specific diseases for which medical monitoring is recommended for member of the Exposure Class.

- **PFOA Exposure and Cancers**

Cancer outcomes of PFOA exposure that are supported in the medical literature include kidney and testicular cancer. [Barry, et al., 2013, Steenland and Woskie, 2012, Vieira, et al., 2013] In addition, there is an indication of excess risk of prostate cancer [Lundin, et al., 2009, Steenland, et al., 2015], and, this risk was detected again when the PFOA exposure has been above population median levels and a familial risk factor is present. [Hardell, et al., 2014] [Hardell, et al., 2013] There is also an early indication of increased breast cancer risk, [Wielsoe, et al., 2017], a risk that interacts with inherited gene polymorphisms. [Ghisari, et al., 2014] The

C8 science panel found a "probable link" between PFOA exposure and kidney cancer, and between PFOA and testicular cancer.

Of these, kidney and testicular cancer risks have two additional characteristics. They are target organs with functional changes known to follow from PFOA exposure, including changes that can contribute to carcinogenesis. And, importantly, they are also cancers for which a medical monitoring program can intervene beneficially in the health and well-being of the exposure population by implementing monitoring that is not duplicative of care already received in the community.

In addition to the human findings, mentioned above, substantial experimental data support the carcinogenic potential of PFOA exhibited in population study. It is well known that PFOA is also excreted by and accumulated in the kidney. Animal models show evidence that PFOA is cytotoxic in rodents. [Klaunig, et al., 2012] Experimental evidence supports that PFOA causes DNA and RNA alterations in renal epithelial cells. [Gorrochategui, et al., 2016] While PFOA is seldom studied for renal oncogenicity in experimental settings, and is not known to be a direct renal mutagen, [Stromqvist, et al., 2012] it is known to cause oxidative stress in a wide variety of situations, leading to cell cycle arrest and responsive upregulation of apoptosis (programmed cell death). [Fernandez Freire, et al., 2008, Zhao, et al., 2011]. Upregulation of apoptosis is a physiologic response to the disruptions in cell cycles, and the part of the body's attempt to prevent uninhibited cell proliferation (carcinogenesis) when under stress.

With regards to testicular cancer, multiple lines of evidence support testicular toxicity and male hormone disruption, a risk for testicular cancer. Furthermore, PFOA is now understood to alter the transcriptional environment that regulates the synthesis of sex hormones. [Kang, et al., 2016] PFOA inhibits normal enzymatic activities fundamental to hormone synthesis in

animal cell lines. [Zhao, et al., 2011] Alterations in sex hormone synthesis are of direct importance to cancer development in hormone sensitive organs, such as the testicle.

In addition to causing cancer in testicular stromal cells in exposed animals, PFOA also disrupts the blood-testis barrier in experimental settings, [Dankers, et al., 2013], indicating that exposure to this and other cancer causing agents can increase as an outcome of exposure. In addition, multiple studies of PFOA provide evidence of oxidative stress following exposure in a variety of experimental settings. [Mashayekhi, et al., 2015, Qian, et al., 2010, Yang, et al., 2014] [Dankers, et al., 2013, Klaunig, et al., 2012]. This includes oxidative stress specifically in the testicle, and diminishment of testicular growth. [Liu, et al., 2015]

The background of endocrine disruption deserves discussion in the context of cancer (for organs such as the testicle) and in other settings. When an environmental chemical disrupts cholesterol metabolism (as PFOA does), there is great concern that it will also disrupt other aspects of sterol metabolism including sex hormones. The human [Bjerregaard-Olesen, et al., 2016, La Rocca, et al., 2015] and experimental physiologic literature concerning endocrine disruption of sex hormones is by PFOA is very strong, showing alterations in estrogen and testosterone regulation, [Kang, et al., 2016, Kjeldsen and Bonefeld-Jorgensen, 2013] including in mammary epithelial cells, [Halsne, et al., 2016, Sonthithai, et al., 2016], as well as in hepatocytes. [Buhrke, et al., 2015] Many concerns arise out of the strong evidence for endocrine disruption by PFOA, including but not limited to carcinogenesis, alterations in the developing human in utero and in early childhood, liver disease, and lipid abnormalities that may need treatment.

- **PFOA Exposure and Pregnancy Related Conditions**

In addition to cancer outcomes, there is also evidence for efficient transplacental transport and exposure of the developing human fetus following maternal PFOA exposure. [Chen, et al., 2017, Kato, et al., 2014, Manzano-Salgado, et al., 2015] This exposure to PFOA also affects the metabolic environment of the pregnant mother. [Matilla-Santander, et al., 2017] There are widely reported adverse health outcomes of PFOA exposure during development and early life.

One such finding is pregnancy-induced hypertension (PIH), an association that grew stronger as techniques for improving epidemiologic methods were introduced into the C8 Health study of the exposure population in the mid-Ohio Valley. [Avanasi, et al., Darrow, et al., 2013, Savitz, et al., 2012].

PFOA exposure is also associated with a greater likelihood of other endocrine associated outcomes, including discontinuing breastfeeding (shortened duration of <3 months). [Romano, et al., 2016]. Shortened duration of breastfeeding is an undesirable health outcome with many implications for subsequent health and development of the child. This finding is unlikely to be reverse causation because it persists when controlled for breastfeeding in previous pregnancies. Furthermore, breastfeeding by a PFOA-exposed mother leads to additional exposure in the infant, further contributing to higher serum concentrations in toddlers, [Papadopoulou, et al., 2016] as well as to parental concern about an important maternal choice and activity (breast feeding), generally considered to be healthy and beneficial.

- **PFOA Exposure and Thyroid Disease**

Exposure to PFOA has been associated with increased risk of thyroid disease that affects children and adults. The association of PFOA exposure with altered thyroid hormone function is

found in multiple studies. Exposure to PFOA alters thyroid hormones including the maternal thyroid hormone milieu. [Webster, et al., 2014, Yang, et al., 2016, Lopez-Espinosa, et al., 2012] Cord blood levels of thyroid hormone may also be affected by PFOA exposure. [de Cock, et al., 2014, Kim, et al., 2011] Recent work shows a relationship between PFOA, circulating thyroid antibodies, and congenital hypothyroidism. [Kim, et al., 2016] as well as hypothyroidism in childhood. [Lopez-Espinosa, et al., 2012]

In addition to this effect on mothers, developing humans, newborns, and children, PFOA exposure is associated with increased reports of thyroid disease in adults. [Melzer, et al., 2010, Winquist and Steenland, 2014] A recent review article notes that the risk of thyroid disease appears greater in women and children. [Coperchini, et al., 2017] Although it is not bioconcentrated in thyroid in general, PFOA can be detected specifically in surgical tissue specimens of patients with thyroid disease. [Pirali, et al., 2009]

- **PFOA Exposure and Liver Disease**

PFOA exposure alters liver function in exposed humans. Higher serum concentrations of the liver biomarker alanine transaminase (ALT, also known as SGPT) as well as other markers of altered liver metabolism are consistently associated with PFOA exposure. [Darrow, et al., 2016, Gallo, et al., 2012, Gleason, et al., 2015, Lin, et al., 2010, Sakr, et al., 2007, Yamaguchi, et al., 2013] The known risk of PFOA exposure may increase in obese individuals. [Lin, et al., 2010]

These alterations in liver function have substantial population and individual significance in that they predict altered liver metabolism. More likely than not, they represent an underlying risk for the spectrum of liver disorders (different severities of one condition) known as nonalcoholic fatty liver disease (NAFLD). This disorder starts with hepatic steatosis, an early stage that begins to affect the health of the individual, and can progress to more severe fibrotic

liver injury that can eventually lead to hepatic cirrhosis or end-stage liver disease in the most severely affected. Because cirrhosis is associated with an increased risk of liver cancer later in life, NAFLD is associated with this risk. [Chalasani, et al., 2012] NAFLD is now one of the leading underlying causes for liver transplantation in the United States.

Additionally, NAFLD is consistently accompanied by increased risk of health co-morbidities, especially a group of diseases named metabolic syndrome that includes insulin resistance and diabetes, hypertension, and hyperlipidemia and NAFLD. The same laboratory evidence of metabolic alterations that characterizes metabolic syndrome is also reliably associated with PFOA exposure, including higher liver enzymes such as ALT, evidence of response to reactive oxygen species such as uric acid, and higher LDL and total cholesterol. These similarities, elevations in biomarkers present in both human PFOA exposure and human NAFLD, are not coincidence. Multiple studies show that animals exposed to PFOA have genetic and histopathologic changes of steatosis. [Das, et al., 2017, Tan, et al., 2013] The association for the Study of Liver Diseases, American College of Gastroenterology, has recommended that individuals with abnormal liver functions be evaluated by their physicians as though suspected to have NAFLD and worked up accordingly, so as to assess the severity of the liver disease and the presence of co-morbidities. [Chalasani, et al., 2012]

Strong experimental evidence implicates PFOA as a contributing cause of the physiologic disruptions of liver metabolism. The PFOA-induced liver injury in test animals is very well established and has been shown to follow from dysregulation of fatty acid trafficking, with associated biochemical and histologic alterations that are similar to human NAFLD. [Hui, et al., 2017] It is well known that untargeted peroxisome proliferator (PPARs), especially PPAR-alpha (PPAR-a) agonists are associated with adverse effects on the metabolic function of the liver,

[Gross, et al., 2017, Samuel and Shulman, 2017], a problem exacerbated in the presence of preexisting risks. And it is well understood that one of many mechanisms of PFOA activity is up-regulation of PPAR-a. [Kennedy, et al., 2004] Since 2008, increasing evidence has been gathered showing that multiple other, non-PPAR mechanisms are at also work. [Bijland, et al., 2011, Bjork, et al., 2011, Corsini, et al., 2012, DeWitt, et al., 2009, Elcombe, et al., 2012, Rosen, et al., 2017, Wolf, et al., 2008] It is now known that these non-PPAR mechanisms also contribute to altered liver metabolism and abnormal lipid handling.

The plausibility of the liver enzyme finding is strongly buttressed by consistent laboratory toxicology findings [Yang, et al., 2014] showing liver physiologic and pathologic abnormalities of domestic pets [Bost, et al., 2016] and in controlled laboratory toxicology conditions, [Botelho, et al., 2015, Cui, et al., 2015, Mashayekhi, et al., 2015, Qazi, et al., 2010, Wu, et al., 2017, Yan, et al., 2017, Yan, et al., 2015, Yang, et al., 2014, Yang, et al., 2017, Zhang, et al., 2016], as well as in some free living marine mammals. [Fair, et al., 2013] Alterations of genetic expression consistent with abnormal liver metabolism have also been documented following exposure. [Wang, et al., 2017] In experimental study, mice were at risk for PFOA-induced liver damage if there was also a preexisting stressor on liver health. [Qazi, et al., 2013]

In the presence of risk factors for NAFLD, such as PFOA exposure and/or hyperlipidemia, it is recommended that screening be done for NAFLD with liver enzyme and related liver function testing. Multiple lines of evidence support the presence of preventable mortality. The early detection of NAFLD is of clinical benefit to patients, who can undergo treatment that mitigates consequences and alter risk factors that influence progression to more serious disease. [Gillespie, et al., 2012, Grossman, et al., 2017, Lozano, et al., 2016] In each

case, the goal of the screening program would be to facilitate the access of those affected by the risk factor to diagnostic testing and information that facilitates appropriate follow up and treatment.

- **PFOA Exposure and Hyperlipidemia**

PFOA exposure has been repeatedly associated with alterations in human lipid metabolism, including higher total serum cholesterol and higher LDL cholesterol. These findings pertain to adults, ([Eriksen, et al., 2013, Fu, et al., 2014, Sakr, et al., 2007, Steenland, et al., 2009, Winquist and Steenland, 2014], to pregnant women, [Matilla-Santander, et al., 2017, Skuladottir, et al., 2015, Starling, et al., 2013] and to children and adolescents. [Frisbee, et al., 2010, Geiger, et al., 2013, Koshy, et al., 2017, Maisonet, et al., 2015, Zeng, et al., 2015, Matilla-Santander, et al., 2017] In a large PFOA-exposed community study, PFOA exposure was associated with increased hypercholesterolemia, [Steenland, et al., 2009, Winquist and Steenland, 2014], and of health importance, necessitated a greater need for lipid-lowering treatment with medications. The alterations in lipid metabolism have substantial population and individual significance, and we know that more individuals in a population exposed to PFOA will need treatment for high cholesterol.

Metabolomic approaches reveal that lipid metabolism is altered in the liver by PFOA. [Peng, et al., 2013, Yu, et al., 2016] In test animals, the effect of the PFAS including PFOA on genes controlling lipid homeostasis and leading to steatosis has been demonstrated, [Das, et al., 2017, Hui, et al., 2017, Peng, et al., 2013, Wang, et al., 2014, Yan, et al., 2015]. Lipid droplets and liquefaction appear in the liver of mice exposed to PFOA. [Wang, et al., 2013] Detection of the disruption of lipid handling is best seen when test animals are fed a “Western” high fat diet. [Hui, et al., 2017, Tan, et al., 2013].

Based on overwhelming evidence, a stepped-up approach to lipid monitoring is warranted.

- **PFOA Exposure and Uric Acid Abnormalities**

PFOA exposure is consistently associated with increased serum levels of uric acid in adults, [Gleason, et al., 2015, Shankar, et al., 2011, Steenland, et al., 2010] and in children. [Kataria, et al., 2015, Qin, et al., 2016] The increase is sufficient to cause clinical hyperuricemia in children. [Geiger, et al., 2013, Qin, et al., 2016], a known risk factor for future disease, [Song, et al., 2017] especially in obese children. [Cardoso, et al., 2013]

The serum elevations in uric acid levels have substantial population and individual significance. We know that it is more likely than not that more individuals in a PFOA-exposed population will have elevated uric acid levels, including both adults and children. [Gleason, et al., 2015, Kataria, et al., 2015, Steenland, et al., 2010] and the expected finding of increased hyperuricemia occurs when it is sought [Geiger, et al., 2013, Qin, et al., 2016] (more individuals in the population will be evaluated medically for hyperuricemia).

With regards to gout, a disease that can result from high serum uric acid levels, the risk of gout from PFOA induced uric acid elevations has not been studied or determined in populations exposed to PFOA**.** The relationship to uric acid was not anticipated in the C8 health study, and, it did not inquire about the presence of gout. Uric acid is also important in the context of comorbidities because elevated uric acid independently predicts and interacts with multiple co-morbidities, including future risk of kidney failure and poorer prognosis in the presence of existing kidney disease. Thus, when uric acid levels are elevated this prompts further medical evaluation for these co-morbidities, including tests such as BUN and creatinine, and 24-hour urine testing for kidney function. Additionally, elevated uric acid in the presence of any renal

compromise (which also can contribute to elevated uric acid) may prompt medication treatment (urate lowering treatment), which can slow the progression of renal disease in asymptomatic hyperuricemia. [Wang, et. al., 2013] Uric acid testing is recommended in this population.

- **PFOA Exposure and Ulcerative Colitis**

Two studies within the C8 Health population show an incident association of PFOA exposure to ulcerative colitis, [Steenland, et al., 2015, Steenland, et al., 2013] and the associated team of epidemiologists considered that such linkage does exist.[1]

5. Medical Monitoring Program Implementation

Necessary Components of Medical Monitoring Program

The following components are necessary for inclusion in the medical monitoring program for members of the Bennington Exposure Class in order to ensure that the program is useful for the early identification of certain diseases for which the exposed population is at a heightened risk due to their PFOA exposure, and so that disease can be minimized and health outcomes improved.

- **Medical Monitoring Program Physician(s)**

A contract with a program physician (or physicians) will be created in order to implement the medical aspects of the program on the ground in Bennington[2] In order to effectively communicate with and properly advise participating Class members, the program physician and the nurse will need to take training related to PFOA, PFOA exposure in humans, and the diseases and health risks associated with PFOA exposure. The program physician will supervise all aspects of office practice and his/her general responsibilities will include:

[1] http://www.c8sciencepanel.org/prob_link.html
[2] As a practical matter, a Registered Nurse (RN) with experience in phlebotomy will be necessary to draw blood and conduct other clinical testing, and a third staff individual will be needed to perform reception and data entry functions; however, these individuals should already be staffed in place.

(1) Initial Screening Consultation: At commencement of the program, each participating Class member will be provided with an initial screening consultation where the program physician will oversee the following services:

- Physical examination, consisting of height, weight, (and subsequent automated ability to create a calculated BMI), and blood pressure, of each participant;
- Educate the participant about the program as well as about the diseases and health risks associated with PFOA exposure;
- Provide appropriate recommendation and referral based on review and analysis of each participant's initial Survey responses;
- Conduct the initial diagnostic clinical testing of each participant; and
- Review, critique, and improve the design and content of public web communications to the affected population.

(2) Annual Surveillance Consultation: In each ensuing year of the MMP, each participating Class member will be provided with a surveillance consultation where the program physician will:

- perform a physical examination, consisting of height, weight, BMI, and blood pressure, of each participant;
- provide appropriate recommendation and referral based on review and analysis of each participant's responses to the revised Survey;
- Conduct the annual diagnostic clinical testing of each participant; and
- Review, critique, and improve the design and content of public web communications to the affected population.

(3) Follow-Up Notification/Consultation: The program physician will, for both initial screening and annual surveillance, notify participants via letter of the results of the clinical testing. If the results are abnormal, the program physician will discuss referral of the participant to a treating physician for additional testing and treatment. If requested by the participating Class member, or by the treating physician, the program physician will provide the participant

with a follow-up consultation (directed at referral choices, not at treatment) to discuss abnormal laboratory results.

(4) Pregnancy Consultation: The program will have an easy means for participants to report their intention to become pregnant as well as pregnancy. In the event any participating Class member becomes pregnant and reports a pregnancy, the program physician will provide a consultation to the pregnant participant in order to educate the member about PFOA-associated health risks during pregnancy and breastfeeding. This is a critical service, as the many personal and societal benefits of parenthood are clear and a matter of personal choice that is informed by many factors. And, the considerable benefit of breast feeding for the growing infant is well-known and without dispute, and the benefits are worth reinforcement so that they are weighed when risks are considered. We expect that some or all prospective parents will be concerned about the decrease of maternal serum PFOA during pregnancy because it reflects decreasing body stores due to the direct transfer of maternal PFOA in utero to the developing fetus, and also of the subsequent and similar transfer in breast milk to the developing infant. There is no scientific doubt about these transfers of a toxin from mother to child. The goal of the program is to provide informed and simple health communications that can be conveyed in a private medical setting and framed in ways that avoid sensationalism, convey the known findings without exaggerating them, and empower prospective mothers to breast-feed.

- **Expert Panel**

An expert panel, consisting of an Epidemiologist and a Clinician, both of whom are knowledgeable with biomonitoring and the adverse health effects associated with PFOA exposure, will be established to perform certain essential program functions. The program physician(s) is expected to provide input to the decision-making of the expert panel, but will not

be a panel member. The program physician will provide community and program function observations concerning implementation that might not be obvious to scientific advisors.

The expert panel functions will include creation of the initial diagnostic Survey questionnaire for participating Class members as well as yearly modification/revision of the Survey based on the Panel's review and analysis of program data to date. Any modifications will need to consider consistent data-keeping, and the expert epidemiologist will understand and plan for this. Additionally, the Panel will, with the assistance of an administrative assistant or graduate student associated with the epidemiologist, perform any necessary data cleaning and analysis so that overall program data can be interpreted and summary data (not individual data) presented to the public for educational purposes and community planning. The epidemiologist or designee will be responsible for the content of the scientific aspects of web communications to participants, including the creation of summary data profiles that describe the population demographically, and the improvements in PFOA serum concentrations over time.

- **Diagnostic Monitoring**

Survey Questionnaire

All participating Class members will complete an initial diagnostic Survey prior to initial consultation and clinical testing with the Program, under the direction of its physician and including the work of staff. Each participant will also fill out a revised diagnostic survey on an annual basis concomitant with yearly clinical testing. The survey can be filled out on-line, by the participant, parent, or guardian. The format of the Survey will be generally derived from an existing and successful model, the C8 Health Project Survey, and, as stated above, will be created and modified by the expert panel to ensure that Survey questions are diagnostic in nature

and targeted to elicit responses indicative of symptoms and risk factors for the specific monitored diseases.

Clinical Testing

Clinical laboratory tests, including various blood tests and urinalysis, will be conducted pursuant to the specific monitoring protocols set forth below. In order to formulate a clinically appropriate monitoring program, I consulted applicable screening guidelines and recommendations, including those from the American Cancer Society, the American Urological Society, the American Gastroenterological Association, the American College of Obstetricians and Gynecologists, the American Thyroid Association, and the American Association of Clinical Endocrinologists. I also, based on my own clinical experience and significant experience in the evaluation and medical monitoring of humans exposed to PFOA, considered what clinical testing would best provide adequate medical monitoring and early disease detection for this exposed population.

- **Medical Monitoring Program Website**

A program website will be developed and maintained to provide Class members with program related information and the ability to submit required information electronically. The program website is intended to facilitate Class member participation and education, and should, at a minimum, include the following:

  - General information about the medical monitoring program;
  - Important information about legal and other program related documentation;
  - Contact information for the program;
  - Answers to frequently asked questions;

- Expert Panel analysis of summary level (not individual) medical monitoring program data;
- Description of eligibility and registration documentation, which may be submitted in-person or on-line and then re-verified in person. The advantage of on-line initial submission is that it saves the participant from waiting during the time required to scan/process documents. The documents submitted on-line for initial registration will still need to be verified in person.
- Online submission of diagnostic Survey responses (note that in-person assisted options are also available to participants who are unable or choose not to submit the survey on-line. It is anticipated that >70% of participants will want to do the survey on-line, based on prior experience); and
- Portal where participating class members can log-in and view their MMP information and data.

- **Central Database**

A HIPPA compliant central database shall be created and maintained to include all medical monitoring program data, including each participating Class member's eligibility and registration data, PFOA exposure data (well and blood testing results), and program monitoring data, including diagnostic Survey data and results of clinical testing. This data will be hosted securely, and available only to contracted epidemiology and clinician personnel.

- **Third-Party Administrator**

I strongly support the general concept of an expert Third Party Administrator in regards to implementation and administration of medical monitoring programs. Medical monitoring incurs costs, and when these costs are incurred on behalf of an exposure population, it is wise to

have a third-party ensure payment of these costs. Moreover, a third party administrator can provide quality assurance and also review program fidelity in key areas. Services provided by a third party administrator may include ensuring the following:

- That program participants are truly qualified to participate, and that program has collected and secured the eligibility documents in a responsive and consistent manner
- That payments to consultants are consistent with expectations
- That clinical testing and associated costs are consistent with expectations.
- That quality assurance data, for example the technique used by the selected laboratory to measure PFOA, are archived and accessible to program personnel, and that technological changes, which are inevitable over time, are recorded.

- **Monetary Incentives**

I also strongly support the concept of monetary incentives to encourage Class member participation in the medical monitoring program described herein. This support is based on my personal experience with the C8 Health Project, as well as the experience of other medical monitoring programs, such as the ones cited by Edgar C. Gentle III, Esq., in his expert report. As discussed by Dr. Donald Shepard in his expert report, the literature supports my experience that incentives (when compared to no incentives) result in better results, i.e., higher initial participation and retention, and that higher incentives produce the best results.

6. <u>Specific Diagnostic Monitoring Protocols (Screening and Surveillance)</u>

We know to reasonable degree of medical certainty that PFOA exposure is associated with adverse health effects, illnesses, and diseases, and the number of these diseases continues to increase over time as additional scientific research is conducted. Many, but not all, of the health risks associated with PFOA exposure are amenable to a biomonitoring program designed to improve human health, and the omission of a diagnosis or health outcome from a biomonitoring program is not intended to be understood as a statement about the presence or absence of

increased risk - that decision was already made. Rather, it is a consideration of whether there are useful diagnostic interventions that can provide a beneficial decrease in risk and improve health, and also whether those same diagnostic interventions would have been reliably provided to the participants anyway and therefore become duplicative.

Based on my review of literature concerning recommended monitoring for disease detection, my own clinical expertise, as well as my experience in the evaluation and medical monitoring of humans exposed to PFOA, it is my opinion to a reasonable degree of medical certainty that the following diagnostic monitoring would most benefit members of the Exposure Class in providing early identification of these diseases and improving health outcomes for this exposed population.

1. Kidney Cancer

Survey Monitoring: Survey monitoring should consist of diagnostic questions about the symptoms of kidney cancer including urinary frequency, blood in urine, flank pain, abdominal mass, and extreme fatigue and/or fever. In addition, there will be survey questions to address the presence/absence of concurrent urinary tract infection and menses.

Clinical Monitoring: Urinalysis.

Periodicity: Yearly survey and diagnostic monitoring for all class members ≥ 18 years of age.

Diagnostic Monitoring Outcomes: Participating class members reporting survey data that is positive for symptoms or signs of kidney cancer will be evaluated by the program physician during consultation and, if indicated, referred to a treating physician who will recommend any necessary additional testing and treatment. Class members who have abnormal urinalysis will be referred by the program physician to a treating physician for further evaluation and possible treatment.

2. Testicular Cancer

Survey Monitoring: Survey monitoring should consist of diagnostic questions about the symptoms of testicular cancer including painless testicular swelling or a lump in the testicle, change in testicular size, testicular discomfort, fluid accumulation in scrotum, gynecomastia (breast growth) or breast tenderness, and change in sexual function.

Clinical Monitoring: Male Class members will have the opportunity for an optional physical (scrotal) examination by the program physician.

Periodicity: Yearly survey monitoring for all male class members ≥ 15 years of age.

Diagnostic Monitoring Outcomes: Participating class members reporting survey data that is positive for symptoms or signs of testicular cancer will be evaluated by the program physician during consultation and, if indicated, referred to a treating physician who will recommend any necessary additional testing and treatment. Male Class members who have an abnormal physical examination will be referred by the program physician to a treating physician for further evaluation and possible treatment.

3. Pregnancy-Related Conditions: Pregnancy-Induced Hypertension, Thyroid Disease during pregnancy, and Shortened Duration of Breast-feeding.

Survey Monitoring: Survey monitoring should consist of diagnostic questions about the class member's plans to become pregnant, as well as about complications during previous pregnancies, such as hypertension during pregnancy, chronic hypertension developing after a pregnancy, and pre-eclampsia.

Clinical Monitoring: Blood pressure cuff for personal in-home blood pressure monitoring for all participating class members who are pregnant and of 20 weeks gestation or more.

Periodicity: Yearly survey monitoring for female program participants of child rearing age, and consultation with program physician for participants who become pregnant at any time.

Diagnostic Monitoring Outcomes: Should a participating Class member be planning pregnancy (or should they become pregnant during the ensuing year) the participant will consult with the program physician in order to thoroughly understand the member's increased risk for certain PFOA-associated pregnancy and breast-feeding complications. These include thyroid disease, pregnancy-induced hypertension, and shortened duration of breastfeeding. The participant should be advised of the importance of regular pre-natal care, the need for TSH level at her first pre-natal appointment, and of monitoring her blood pressure regularly at home after 20 weeks gestation under the guidance of her obstetrician. Additionally, all pregnant participating Class members will be copied on a letter from the program physician to the participant's obstetrician outlining the participant's increased risk for pregnancy complications, including thyroid disease, pregnancy-induced hypertension, and shortened duration of breastfeeding, as well as the need for heightened blood pressure monitoring after 20 weeks gestation. It will be strongly conveyed that these are not generally reasons to delay pregnancy; rather, they are simply risks that the monitoring program addresses.

4. Thyroid Disease (Non-Pregnancy Setting)

Survey Monitoring: Survey monitoring should consist of diagnostic questions about symptoms of thyroid disease, including heat and cold intolerance, muscle weakness, hair loss, sudden weight gain, extreme fatigue or irritability, as well questions about risk factors for thyroid disease such as a history of specific thyroid diseases, history of autoimmune disease, history of abnormal thyroid laboratory testing, and family history of thyroid disease.

Clinical Monitoring: Blood tests: TSH.

Periodicity: Yearly for all class members ≥ 12 years of age.

Diagnostic Monitoring Outcomes: Participating class members reporting survey data that is

positive for symptoms or risk factors for thyroid disease will be evaluated by the program physician during consultation and, if indicated, referred to a treating physician who will recommend any necessary additional testing and treatment. In addition, Class members who have abnormal thyroid blood testing will be referred by the program physician to a treating physician for further evaluation and possible treatment.

5. Liver Function Abnormalities and Non-Alcoholic Fatty Liver Disease

Survey Monitoring: Survey monitoring should consist of diagnostic questions about the risk factors for non-alcoholic liver disease such as a history of Diabetes Type 2 or insulin resistance, hypertension, and obesity. Other liver disease risk factors will also be addressed in the survey, including alcohol intake, BMI calculation, infectious hepatitis, and diabetes. Clinical findings and symptoms of disease such as chronic itch, red palms and jaundice will also be surveyed.

Clinical Monitoring: Blood tests: Liver Enzyme and Function testing to include: ALT, AST, GGT, Direct and Indirect Bilirubin.

Periodicity: Yearly for each class member ≥ 12 years of age.

Diagnostic Monitoring Outcomes: Participating class members reporting survey data that is positive for symptoms or risk factors for liver disease will be evaluated by the program physician during consultation and, if indicated, referred to a treating physician who will recommend any necessary additional testing and treatment. Class members considered at high risk of steatosis and steatohepatitis will be advised to discuss the topic with a treating physician, or referred. Class members who have abnormal liver function or enzyme testing will be referred by the program physician to a treating physician for further evaluation and possible treatment.

6. Hyperlipidemia

Survey Monitoring: Survey monitoring should consist of questions about the symptoms and risk factors for hyperlipidemia, including yellowish bumps or fatty deposits under the skin

(including but not limited to xanthelasma), history of angina, heart attack or stroke, history of leg pain while walking.

Clinical Monitoring: Blood tests: Fasting Total and LDL cholesterol.

Periodicity: Yearly for all class members ≥ 12 years of age.

Diagnostic Monitoring Outcomes: Participating class members reporting survey data that is positive for symptoms or risk factors for hyperlipidemia will be evaluated by the program physician during consultation and, if indicated, referred to a treating physician who will recommend any necessary additional testing and treatment. Class members who have abnormal blood test results will be referred by the program physician to a treating physician for further evaluation and possible treatment.

7. Uric Acid Abnormalities and Gout

Survey Monitoring: Survey monitoring should consist of questions about history of hyperuricemia and symptoms of gout such as a history of severe or sudden pain in a joint, lumps (tophi) around a joint, redness or swelling in a joint, and history of kidney stones, or hematuria.

Clinical Monitoring: Blood tests: Uric Acid; Creatinine.

Periodicity: Yearly for all class members ≥ 18 years of age.

Diagnostic Monitoring Outcomes: Participating Class members reporting survey data that is positive for symptoms of uric acid abnormality and/or gout will be evaluated by the program physician during consultation and, if indicated, referred to a treating physician who will recommend any necessary additional evaluation and/or possible treatment. Class members who have abnormal blood test results will be referred by the Program physician to a treating physician for further evaluation and possible treatment.

8. Ulcerative Colitis

Survey Monitoring: Survey Monitoring should consist of diagnostic questions designed to elicit responses indicative of symptoms and risk factors of ulcerative colitis, including persistent diarrhea, frequency of stool production, blood in stool, pus in stool, abdominal pain or cramping, defecation urgency (and frequency of defecation urgency), weight loss, rosacea, and fever.

Clinical Monitoring: N/A.

Periodicity: Yearly for all class members ≥ 18 years of age.

Diagnostic Monitoring Outcomes: Participating class members reporting survey data suggesting positive indication(s) for Ulcerative Colitis will be evaluated by the Program physician during consultation and, if indicated, referred to a treating physician who will recommend any necessary additional testing and treatment.

9. PFAS Blood Level Assessment and Monitoring:

Survey Monitoring: Survey monitoring should ask participating class members to indicate their PFOA blood serum in the initial Program Survey and in subsequent Surveys.

Clinical Monitoring: A Perfluoroalkyl Substances (PFAS) Blood Panel.

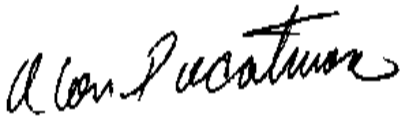
Periodicity: Every two years for 12 years (periodicity based on half-life of PFOA in the blood).

Diagnostic Monitoring Outcomes: The ongoing evaluation of serum PFOA is essential to the well-being of Participating Class members, and also important to community education and understanding of exposure. The natural concern of exposed populations is that contaminants retained internally may not diminish when exposures are decreased; however, this concern is easily addressed and should show population wide decreases unless there are alternative sources of exposure, which are not likely. This monitoring thus addresses the emotional well-being of the population and confirms the expected decreased exposure from contaminated drinking water.

Prior Testimony/Compensation

A list of other cases in which I have testified as an expert at trial or at deposition is attached as Exhibit 3. The Institute of Occupational and Environmental Health of West Virginia University charges $600 per hour for my time in preparing this report.

This the 15th day of December, 2017.



Alan Ducatman, M.D.

REPORT OF ALAN DUCATMAN, M.D.
In the case of Sullivan, et. al. v. Saint-Gobain Performance Plastics Company, No. 5:16-cv-000125-GWC (D. Vt.)

Exhibit 1

CURRICULUM VITAE

ALAN M. DUCATMAN, MD, MSc
Professor, WVU School of Public Health
Adjunct Professor, WVU School of Medicine

PERSONAL DATA

Citizenship: United States

Family: Married, three children

ADDRESS

1407 Health Sciences Center South
PO Box 9190
Morgantown, WV 26506-9190
(304) 293-3693
Fax: 304) 293-2629
aducatman@hsc.wvu.edu

Personal Statement: I have been a successful leader of occupational and environmental health enterprises in research, education, and clinical as well as consultation service. Settings for my work have included military service, compliance oversight in highly technical workplaces, and academic healthcare. I have been a successful consultant to government, industry, and labor entities. My work goal is simply to provide public health value to decision-making, whether the work is about service, teaching, or research.

EDUCATION

1978	MD	Medicine, Wayne State University, Detroit, MI
1974	MSc	Environmental Health. City University of New York—Hunter College, and Mt. Sinai School of Medicine, New York, NY
1972	AB	Analytical Biology. Columbia College, New York, NY

POSTGRADUATE TRAINING

1982	Fellowship in Occupational Medicine, Mayo Clinic, Rochester, MN
1981	Medical Residency. Mayo Clinic, Rochester, MN
1979	Medical Internship. Brown University, Providence, RI

ACADEMIC APPOINTMENTS

2012-present	Professor of Public Health, and Professor of Medicine, West Virginia University
1992-present	Professor of Medicine, West Virginia University School of Medicine
2012-2015	Professor, Department of Emergency Medicine, West Virginia University School of Medicine
2011-12	Professor and Interim Founding Dean, Professor of Public Health, West Virginia University School of Public Health
2002-present	Adjunct Professor, Department of Animal and Nutritional Sciences, Davis College of Agriculture, Natural Resources, and Design, West Virginia University
1994-97	Adjunct Professor of Medicine. Medical University of South Carolina

1991-2004 Clinical Associate Professor of Preventive Medicine. University of Mississippi School of Medicine, Jackson, MS

1990-93 Adjunct Associate Professor of Public Health (Environmental Health). Boston University School of Medicine, Boston, MA

1990-93 Clinical Associate in Neurology, Massachusetts General Hospital, Boston, MA

1987-89 Lecturer on Medicine. Harvard Medical School, Boston, MA

1983-86 Assistant Professor of Community Medicine, Eastern Virginia Medical School, Norfolk, VA

PROFESSIONAL EXPERIENCE

2012- Tenured faculty in the School of Public Health, co-appointment in the School of Medicine, Department of Medicine. Responsible for clinical care, graduate teaching (including for-credit as a member of the graduate faculty), funded research, and external consultation to industry, labor, government, and non-profit organizations. More recent duties also include for-credit teaching of true undergraduates.

2011-2012 **Interim Founding Dean**, West Virginia University School of Public Health. The School of Public Health enrolls over 170 master's and PhD graduate students in the MPH, the PhD in Public Health Sciences, and the MS in School Health Education.

1997-2011 Appointment as **Chair**, Department of Community Medicine, West Virginia University School of Medicine

The Department of Community Medicine has grown and evolved to become the WVU School of Public Health. This is the first fully new school at WVU in more than five decades. Faculty participate in and direct programs in a Prevention Research Center, an Injury Control Research Center, an Institute for Occupational and Environmental Health, a Health Services Research Center, and a Center on Aging, as well as the Mary Babb Randolph Cancer Center and other organ-based research centers. Faculty focus much of their research in population health, health services, community intervention, and community health in rural settings.

1996-97 **Interim Chair**, Department of Community Medicine, West Virginia University School of Medicine.

1992-97 **Director**, Institute of Occupational and Environmental Health (IOEH), West Virginia University School of Medicine

The IOEH sponsors NIOSH-supported occupational medicine residency training program and participates in multidisciplinary research and teaching activities. Service and research are provided for clinical care and outcomes, environmental health, toxic exposure assessment, health services research, ergonomics, and epidemiology. IOEH faculty provide clinical care, graduate and continuing medical education, grant-funded research with an emphasis on clinical outcomes, and workplace epidemiology consulting to government agencies, industry, and labor. A primary goal of the Institute is decreasing the frequency and severity of work-related injury in West Virginia.

1992 Faculty member, WVU Institute of Occupational and Environmental Health

1986-92 **Director**, Environmental Medical Service, Massachusetts Institute of Technology, Cambridge, MA

Responsible for Occupational/Environmental Health at Massachusetts Institute of Technology and affiliated institutions with over 20,000 employees, as well as students and official visitors. Supervised 50 professionals and support staff, with a budget in excess of

$3 million. Provided service to MIT in biohazards, industrial hygiene, radiation protection, nuclear reactor safety, occupational health, and toxicology. In addition, provided selective research and consultation to governments, industry, and workers.

1983-86 **Director**, Professional Occupational Health Branch, United States Navy Environmental Health Center, Norfolk, VA (LCDR, Medical Corps).

Responsible for worldwide consulting concerning occupational health problems of the Navy's 1.1 million employees. Reported to the Navy Inspector General concerning the status of occupational health care at Navy clinics. Provided quality assurance assessment for asbestos medical surveillance

1982-83 **Director**, Occupational Medical Services, Columbia Park and Brooklyn Park Medical Groups, Columbia Park and Brooklyn Park, MN. Founded a successful and rapidly expanding private occupational health practice within a multispecialty group.

PATIENT SERVICE

Outpatient Care Devise and conduct medical surveillance programs for industry, labor, and government in West Virginia and surroundings. Conduct clinical referral evaluations of patients with known or suspected environmental exposure. Patients come to our referral clinic from all counties in West Virginia and seven neighboring states.

Environmental Health Consulting: Evaluate and ameliorate environmental risks on behalf of government, industry, workers, and citizen groups.

CERTIFICATION AND LICENSURE

Certification: American Board of Preventive Medicine (Occupational Medicine)
January 24, 1983 - Certificate Number 21816

American Board of Internal Medicine
September 16, 1981 - Certificate Number 79779

Licensure: West Virginia - July 13, 1992 - Perm. 16937

Military Service: LCDR, Medical Corps, USNR, 1983-86
CDR (inactive) USNR, 1986-91

UNDERGRADUATE AND MEDICAL STUDENT TEACHING

Annual

2017- PUBH 243 Global Occupational and Environmental Health (Required true undergraduate course in new public health program. Current enrollment, year one, 29 students)

2001-2005 MDS 124: Community Health and Disease (1 hour).

2000-2005 Pathology 751: Environmental Diseases (1 hour).

2000- CCMD 712 and CCMD 713: Public Health Topics in Disease Status and Disease Prevention.

1997-2001 Orientation 60 (undergraduate), 1 hour

1996-2001 **West Virginia School of Osteopathic Medicine**. MSI Lectures in Occupational and Environmental Health – 6- 8 hours per year

Intermittent

1996	Physical diagnosis for medical students
1994	**Medical University of South Carolina**. Summer M2 Lectures, Environmental Health
1994-95	**Uniformed Service University of Health Sciences (Bethesda, MD)**, Occupational and Respiratory Disease (2 contact hours)
1993	Medical Aspects of Environmental Health, **West Virginia University**, 2.0 credits
1991-92	**Harvard University.** Principles of Occupational Health - 4.0 credits, undergraduate faculty
1987-1991	**University of Mississippi**. Occupational Hazards of Rural Areas, Toxic Hazards in the Workplace, Environmental Dust Diseases. University of Mississippi School, of Medicine, Jackson, MS (Visiting Associate Professor, undergraduate medical education)
1990	**University of Mississippi**. Undergraduate Medical School Course (1 day) Occupational Medicine: An Environmental and Workplace Imperative (Mississippi Physicians and Nurses also attended)
1987	**American Industrial Hygiene Association**. Toxicology. American Industrial Hygiene Association. ABIH Certification Exam Review Class. Faculty
1973-74	**Hunter/CUNY**. Physiology Laboratory. Hunter/CUNY- 2.0 lab credits instructor

Graduate Teaching

1997-2015	**West Virginia University** Master of Public Health Program, Ph. D program. OEHS 601 (previously PUBH 601, 610, and 650): Environmental Health (Core Curriculum) - 3 credits. Principle Instructor and/or co-principal instructor. Course is now provided online, and in the classroom. Currently, Dr. Ducatman is the primary instructor for the online section (20-50 enrollees).
1999- 2012	CMED 691A/PUBH 605: Introduction to International Public Health. Environmental influences on International Health (1 hour).
1997-2003	CMED 791C: Advanced Topics in Toxicology - 1 credit Special Projects and Independent Study – Variable Credit
1997-present	Plan of Study Committee – IOEH Residents
1995	Critical Ethical and Legal Issues in Health Care, 3.0 credits
1987-92	**Harvard School of Public Health.** Organic Solvents. Fundamentals of Industrial Hygiene. (Twice annually; graduate visiting lecturer)

Undergraduate Teaching

2016-present	PUBH 243. Introduction to Global Occupational and Environmental Health. 3 Credits. Lecture materials and student presentations are archived on-line. Twenty-seven students in 2016.

Doctoral Committees

2012-13	Member, PhD in Public Health Sciences Committee for Omayma Alshaarawy.
2011-12	Member, PhD in Public Health Sciences Committee for Sarah Geiger

2009-10	Member, PhD in Public Health Sciences Committee for Joseph Putila
2009-2011	Member, PhD in Public Health Sciences Committee for Loretta Cain

Clinical Teaching

1993-2002	Residency Director, Occupational and Environmental Medicine, West Virginia University.
1992-	Medical student and resident rotations in Occupational Environmental Medicine, West Virginia University. Classroom teaching in environmental health; Clinic teaching in introduction to clinical medicine.
1987	Resident Training Advisor, **Boston University School of Public Health**. Residency rotations
1989	Resident Training Advisor, **University of Kentucky**, Department of Preventive Medicine and Environmental Health. Resident 3 weeks at MIT. 40 hours/week.

MEMBERSHIPS ON SUPERVISING COMMITTEES AND BOARDS OF TRUSTEES

West Virginia and Region

2016-present	Advisory Committee to West Virginia DHHS, Bureau for Public Health. WV Childhood Lead Poisoning Prevention Council
2013-present	West Virginia Health Innovation Collaborative, member (for WV DHHR Cabinet Secretary)
2012	West Virginia Public Health Assessment Committee
2011-2014	Governor's Advisory Council on Substance Abuse
2010	External advisory member for health communications, Marietta (OH)/Mid-Ohio Valley (WV) US EPA Workgroup
2009-present	West Virginia Bureau for Public Health Cancer Cluster Work Group
2006	Monongalia County All-Hazards Advisory Committee
2006	ATSDR State Environmental Waste Site Planning Committee
2005	West Virginia Leadership Council on Public Health Threat Preparedness
2003	West Virginia Heart Disease Program Advisory Council, WV Bureau for Public Health
2003	ATSDR Cooperative Programs Partner, WV DHHR
2003	Ad Hoc Potassium Iodide Policy Review Committee, WV Bureau for Public Health
2003	Monongalia County Health Department Threat Preparedness Advisory Committee
1999	Technical Assistance and Training Subcommittee, WV Bureau for Public Health
1999-2003	Lead Poisoning Prevention Committee, WV Bureau for Public Health
1999	Healthy People 2010 Cancer Work Group
1999	Healthy People 2010 Occupational Safety and Health Work Group
1998	Executive Council, WV Public Health Association
1998	Steering Committee, Tri-State (Southeast) Public Health Leadership Institute
1997-98	WV Bureau for Public Health Medical Waste Advisory Committee
1997-2000	Chair, WV Public Health Association Committee for Continuing Education
1997	Steering Committee, WV Bureau for Public Health Transitions Project
1995-1998	Lead Abatement Advisory Committee, WV Bureau for Public Health and Department of Environmental Health
1993-2009	WV Poison Control Center Advisory Board
1993-94	Grant Proposal Reviewer, WV University Injury Control Training and Demonstration Center.

National

2016	Ad hoc reviewer for Centers for Disease Control, Agency for Toxic Substances and Disease Agency for the work entitled "Health Consultation, Dimock Site." Published May 24, 2016
2014-2015	Member, Health Effects Institute – Special Committee on Unconventional Oil and Gas

	Development
2008-present	Accreditation Council for Graduate Medical Education (ACGME) – Board of Appeals Panel member).
2007-2008	Member, Program Peer Review Subcommittee, Board of Scientific Counselors, National Center for Environmental Health/Agency for Toxic Substances and Disease Registry.
2005-2008	Board of Scientific Counselors, National Center for Environmental Health/Agency for Toxic Substances and Disease Registry. Appointed Committee Chair, August 2007; term ended October 2008.
2004-2009	Wayne State University, External Peer Review for Internal Research Grants Committee
2002-2004	Strategic Medical Intelligence Section, Department of Justice and University of Pittsburgh
2002-2003	American Board of Preventive Medicine. Core Examination Committee.
2002-2007	University of Kentucky Prevention Research Center, Markey Cancer Center; Community Advising Committee through 2003, Scientific Advisory Committee from 2003.
1999-2004	Residency Review Committee; Accreditation Council on Graduate Medical Education-Preventive Medicine, Appointed Vice Chair, 2002; Appointed Chair, 2004.
1998-2004	Board of Regents, American College of Preventive Medicine
1993-2002	American Board of Preventive Medicine, Trustee Chair: Client and External Relations Committee, 1992-99 Chair: Combined Preventive Medicine/Internal Medicine Residency Training Committee
1993-95	International Union of Operating Engineers. National HAZMAT Program Board of Scientific Advisors
1988-92	Residency Advisory Committee, Boston University Medical Center Occupational Health Program
1988-95	American Board of Preventive Medicine/National Board of Medical Examiners. Occupational Medicine Examination Committee.
1985-2003	American College of Occupational and Environmental Medicine. Practice Committee.

International

2015-2016	International Agency for Research on Cancer (IARC). IARC Monographs Working Group for Volume 115 – "Some Industrial Chemicals."

University

2016-present	Elected Representative, School of Public Health Faculty Council
2016-present	Search Committee, Departmental Chair, Occupational and Environmental Health Sciences
2016-present	Curriculum Committee, School of Public Health
2015-16	Promotion and Tenure Committee Member, School of Public Health
2013	Search Committee Member, School of Dentistry
2012	WVU Energy Council
2011	Member, Internal Advisory Committee, Research Training in Behavioral and Biomedical Sciences T32 Grant
2011-	Member, Search Committee, Family Medicine Chair
2010-	Member of the MD/PhD Admissions Committee
2010-	Member of the MD/PhD Advisory Committee
2010-2011	Clinical Council of Chairs
2010	Member of the Discovery and Innovation Input Group, WVU Strategic Planning Council
2009	Member of Search Committee for WVU Provost
2007-2009	Steering Committee Member, WVU National Children's Center Project
2006-2008	Steering Committee Member, Center for Immunopathology and Microbial Pathogenesis
2005-2008	Steering Committee Member, Center for Respiratory Biology and Lung Disease
2005-present	Steering Committee Member, Injury Control Research Center
2004	Chair, United Way Campaign, School of Medicine
2003-2009	Scientific Advisory Board, School of Medicine
2003-2005	West Virginia Prepares: Virtual Medical Campus Continuing Education Partnership Advisory Board
2003	Search Committee Chair, Center for Rural Emergency Medicine Director

2002-2010	Executive Council (formerly known as Council of Chairs)
2001-2007	Mary Babb Randolph Cancer Center (MBRCC) Prevention, Education, and Outreach Advisory Committees
2001-2003	Prevention Research Center (PRC) Executive Planning Committee
2000-2001	Clinical Research Development Grant Study Section
1999	Ad hoc interdisciplinary committees
1999	Internal Reviewer, Grants and Contracts, West Virginia University School of Medicine
1997-2009	Basic Science Chairs Committee
1995-1997	External Advisory Committee, Department of Microbiology and Immunology
1992-1997	West Virginia University Safety Committee
1992-1999	School of Medicine Clinical Council
1992-2002	School of Medicine Executive Committee (Executive Faculty)

EXTERNAL PEER REVIEW

Peer Publications reviewed (by journal)

2016	Environmental Research (3), Environmental Toxicology and Pharmacology (2), PLoS ONE
2015	Environmental Health (2), Environmental Health Perspectives, Environmental Research (2), Military Medicine, Nutrition and Metabolism, PLoS ONE (Ad hoc reviewer for all)
2014	Environmental Health Perspectives (2), Environmental Research (3), Environment International, Occupational Medicine (2), Toxicology Letters (2). (Ad hoc reviewer) American Journal of Industrial Medicine (contributing editor)
2013	BMJ (Open), BMC Endocrine disorders, Diabetologia, Environmental Health Perspectives, Environment International, Nutrition and Metabolism, Public Health Reports (ad hoc reviewer)
2011	Archives of Environmental and Occupational Health (ad hoc reviewer)
2010	Public Health Reports (ad hoc reviewer)
2006-present	Journal of Occupational and Environmental Medicine (ad hoc reviewer)
2006-present	International Journal of Occupational and Environmental Health (ad hoc reviewer)
2005-present	Environmental Health Perspectives (ad hoc reviewer)
1990-	American Journal of Industrial Medicine (Contributing Editor)
2003	National Occupational Injury Research Symposium (abstract reviewer)
2003	USEPA reviewer: Human Health Research Implementation Plan for the National Health and Environmental Effects Research Laboratory
1996-2002	International Journal of Occupational Health (ad hoc reviewer)
1995	Southern Medical Journal (ad hoc reviewer)
1994	Cancer Prevention International (Topical Editor: Occupational and Environmental Health)
1994	American Journal of Public Health (ad hoc reviewer)
1993	Agency for Toxic Substances Disease Registry, Center for Disease Control, Case Studies Reviewer. Ionizing Radiation ATSDR 34; Oct. 1993.
1992-93	Applied Radiology (Environmental Editor)
1991	Journal of Occupational Medicine (ad hoc reviewer)
1990	Toxicology, Occupational Medicine and Environmental Series (TOMES), MICROMEDEX (Assistant Editor)
1990	Congress of United States, Office of Technology Assessment, OTA Reports (Reviewer)
1989-92	Van Nostrand Reinhold (new proposals reviewer)
1987-99	Occupational Environmental Medicine Report (Contributing Editor)

External Peer Review: Promotion and Tenure

2015	Mount Sinai School of Medicine
2012	School of Medicine, University of Virginia; School of Public Health, University of Illinois at Chicago

2011	College of Public Health, East Tennessee State University
2010	Department of Preventive Medicine, State University of New York At Stony Brook
2008	University of Virginia, University of Illinois at Chicago, University of Texas Health Science Center at Houston
2007	University of Illinois at Chicago, Tufts University, Yale University
2005	Uniformed University of the Health Sciences
2004	Dartmouth University School of Medicine, Uniformed Services University of the Health Sciences
2002	University of Pittsburgh
2001	Johns Hopkins University
2000	University of Pennsylvania
1999	Yale University, Univ. of Miami (Fla), UMDNJ-Robert Wood Johnson, Univ. of Utah, Boston University, Uniformed Services University of Health Sciences
1998	Texas A&M University
1997	Jefferson Medical College, University of Maryland
1996	University of Miami (FL), Medical College of Wisconsin
1995	University of Texas, University of Iowa, University of Michigan, University of California, Los Angeles
1994	Tufts University, University of Mississippi

Other External Advising

2006	Asked by WV DHHR to review and assist with Childhood Lead Poisoning Prevention supplemental submission.
2005	Provided opinion to WV DHHR concerning the use of spit tobacco as a harm-reduction cessation therapy. Opinion cited (Ducatman, Meckstroth, Walker, and Swarm) by Governor Joe Manchin III in memorandum of November 1, 2005.
1999	Provided CDC-sponsored Health Officer Seminar in public health environmental issues, June 1999

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Grant Peer Review (Study Section)

2016	PAR-15 353 Centers for Agricultural Health and Safety. Disease. Disability, and Injury Prevention and Control Special Emphasis Panel Meeting. Atlanta, GA, May 9-13, 2016
2004-2009	Wayne State University Institute for Population Studies, Health Assessment, Administration, Services and Economics (INPHAASE).
1995	National Cancer Institute RFA, CA-95-002. Occupational Exposure and Cancer Prevention Agency for Toxic Substances Disease Registry, Centers for Disease Control

Other National Peer Review or Service

Vaccine Injury Compensation Program (VICP), Medical Expert Panel, appointed 2015.

Board of Appeals Panel Member. American Board of Preventive Medicine (Current)

Health Consultation: Dimock Groundwater Site, Released May 24, 2016 by USDHHS/Agency for Toxic Substances and Disease Registry, Division of Community Health Investigations (acknowledged external reviewer).

National Occupational Injury Research Symposium, National Institutes of Occupational Safety and Health, Pittsburgh, PA, October 28-30, 2003. Abstract and paper reviewer.

US Environmental Protection Agency: Human Health Research Implementation Plan for the National Health and Environmental Effects Research Laboratory (NHEERL), 2003. Ten-year plan reviewer.

RESEARCH and PUBLICATIONS

Books

Ducatman AM. Liberman DR (Eds). The Biotechnology Industry: "State of the Art Reviews - Occupational Medicine." Hanley and Belfus, Inc. Philadelphia 1991; 6:2, 326 pp.

Monographs

Hornberger GM, Cullen AC, Ducatman A, Jackson JK, Kappel WM, Krannich RS, Matthews V, Robinson AL, Sandler DP, Stout SL, Swackhammer DL, Zhang J. Strategic Research Agenda on the Potential Impacts of 21st Century Oil and Natural Gas Development in the Appalachian Region and Beyond. 2015, 240pp. Health Effects Institute, Boston MA. Available at www.healtheffects.org

Technical Reports

Gerber BJ, Ducatman A, Fischer M, Althouse R. The Potential for an Uncontrolled Mass Evacuation of the DC Metro Area Following a Terrorist Attach: A Report of Survey Findings. Dec 6, 2006. Research Supported by West Virginia Department of Military Affairs and Public Safety. DOI: 10.13140/RG.2.2.28585.39529 · Affiliation: West Virginia University Available online at http://www.hsp.wvu.edu/r/download/20487 Last Accessed 27 Dec, 2016

Book Chapters

Jin CJ, Werntz C, Ducatman AM. Occupational Toxicology: Applying Toxicology to Individuals. In Ballantyne B, Marrs TC, Syberson T (Eds.). *General and Applied Toxicology* (3rd Ed). Wiley-Blackwell. Chichester, UK. ISBN 978-0-470-7327-4. 3755 pages, chapter pp. 2375-2399.

Ducatman, AM. Multiple Chemical Sensitivity. In Rom WN (Ed). Environmental and Occupational Medicine (4th Ed). Lippincott-Raven. Philadelphia, 2006.

Martin C, Ducatman AM. Nonionizing radiation. In Rosenstock L, Cullen M, Brodkin C, Redlich C (Eds). Textbook of Clinical Occupational and Environmental Medicine, 2nd Ed. Elsevier, Philadelphia, 2005. pp. 870-879.

Ducatman AM. Clinical environmental medicine. In McCunney R. (Ed). A Practical Approach to Occupational and Environmental Medicine. (3rd Ed). Lippincott Williams and Wilkins. Philadelphia, 2003. pp 737-745.

Ducatman, AM. Multiple Chemical Sensitivity. In Rom WN (Ed). Environmental and Occupational Medicine (3rd Ed). Lippincott-Raven. Philadelphia, 1998. pp 891-904.

Ducatman AM. Chemical exposures and causation. In Kaufman HH, Lewin JL (Eds). The Physician's Perspective on Medical Law. American Association of Neurologic Surgeons, Park Ridge, IL, 1997. pp 263-278.

Emmett MS, Emmett DC, Simoyi PM, Ducatman AM. The Changing Shape of Public Health Education. In Rowe and Joby (Eds). Advances in Health Care Research. Omni Press, Madison, WI, 1996.

Ducatman AM. Recombinant Biology. In Stave GM (Ed). Physical and Biological Hazards of the Workplace. Van Nostrand Reinhold, New York, 1994. pp. 479-482.

Ducatman AM. Vaccinia. In Stave GM (Ed). Physical and Biological Hazards of the workplace. Van Nostrand Reinhold, New York, 1994. pp. 312-315.

Ducatman AM. Hazardous environments and occupational physicians: Clinical cluster observations and etiologic causation. In Mehlman MA, Upton A (Eds). The Identification and Control of Environmental and Occupational Diseases. Princeton Scientific Publishing, Princeton, NJ, 1994. pp. 55-73.

Ducatman AM. Clinical Environmental Medicine. In McCunney RJ (Ed). A Practical Approach to Occupational and Environmental Medicine (2nd Ed). Little Brown, Boston, 1994, pp. 623-632.

Ducatman AM, Haes DL. Nonionizing radiation. In Cullen MR, Rosenstock L (Eds). Clinical Occupational Medicine. Saunders, Philadelphia, 1994, pp. 646-657.

Ducatman AM. Biotechnology, occupational health issues. In Corn M (Ed). Handbook of Hazardous Materials. Academic Press, San Diego, 1993, pp. 81-89.

Ducatman AM, Liberman DF. Biotechnology Companies. In Sullivan J, Krieger G (Eds). Hazardous Materials Toxicology. Williams Wilkins, Baltimore, 1991, pp. 556-562.

Ducatman AM, Coumbis J. Chemical hazards in the biotechnology industry. In Ducatman AM, Liberman DF (Eds). The Biotechnology Industry: "State of the Art Reviews - Occupational Medicine." Hanley and Blefus, Inc. Philadelphia 1991; 6:2, 193-208.

Liberman DF, Ducatman AM, Fink R. Biotechnology: Is there a role for medical surveillance? In Hyer WC (Ed). Bioprocessing Safety: Workers and Community Safety and Health Considerations. American Society for Testing and Materials, Philadelphia, 1990, pp. 101-110.

Ducatman AM. United States OSHA Laboratory Standard: "Regulation of toxic substances in laboratories." In Liberman DF, Gordon J (Eds). Biohazards Management Handbook. Marcel Dekker, New York, 1989 pp. 403-415.

Federal Reports

Chair (first author), Report Committee. Centers for Disease Control and Prevention, NCEH/ATSDR Peer Review. "Report on Peer Review and Clearance Policies and Functions in the National Center for Environmental Health and the Agency for Toxic Substances and Disease Registry." (Report is now in the Federal Register.)

State Reports

Ducatman A, Ziemkiewicz P, Quaranta J, Vandivort T, Mack B, Van Aken B. Coal Slurry Waste Underground Injection Assessment, Final Report: Phase II. West Virginia University Water Research Institute. July 30, 2010. 261 pp.

Papers Submitted

Yucel Tufekcioglu E, Koksal S, Ducatman A, Erdogan S. Burnout, depression and psychosocial risk factors among call center workers in three different regions.

Papers Published

Ducatman AM, Tacker DH, Ducatman BS, Long D, et al. Quality improvement intervention for reduction of redundant testing. Academic Pathology 2017; 4:1-10 DOI: 10.1177/2374289517707506

Ducatman BS, Hashmi M, Darrow M, Flanagan MB, Courtney P, Ducatman AM. Use of pathology data to improve high-value treatment of cervical neoplasia. Academic Pathology 2016;3: doi:10.1177/2374289516679849

Alfaraj WA, McMillan B, Ducatman AM, Werntz CL. Tetryl exposure: forgotten hazards of antique munitions. Ann Occup Environ Med 2016 April 8; 28:20. doi: 10.1186/s40557-016-0102-7 PMID 27066259

Ducatman AM, Zhang J, Fan H. Response to prostate cancer and PFOA (letter). J Occup Environ Med 2015 Jun;57(6): e61. doi. 10.1097/JOM 0000000000000470 PMID 26053372

Ducatman A, Zhang J, Fan H. Prostate-specific antigen and perfluoroalkyl acids in the C8 health study population. J Occup Environ Med 2015; 57 (1): 111-14 doi10.1097/JOM.000000000000319 PMID 25563548

Fan H, Ducatman A, Zhang J. Perfluorocarbons and Gilbert syndrome (phenotype) in the C8 health study population. Environ Res 2014: Published on line September, 2014 DOI 10.1016/j.envres.2014.08.011 PMID 25262077

Van Aken B, Quaranta JD, Mack B, Yu H, Ducatman A, Ziemkiewicz P. Environmental Contaminants in coal slurry intended for underground injection in the state of West Virginia. J Environ Eng. 2015. E-Published Nov, 2014 DOI 10:1061/(ASCE)EE.1943-7870.0000874

Quaranta JD, Mack B, Van Aken B, Ducatman A, Ziemkiewicz P. Practical application of dilution analysis for estimating groundwater effects due to coal slurry injection into underground mine voids. Mine Water Environment 2014; 33: 353-361. Published online April 8, 2014. DOI 10.1007/s10230-014-0274-8

Alshaarawy O, Zhu M, Ducatman AM, Conway B, Andrew ME. Urinary polycyclic aromatic hydrocarbon biomarkers and diabetes mellitus. Occup Environ Med 2014;71(6):437-41.

Innes KE, Wimsatt JH, Frisbee S, Ducatman AM. Inverse association of colorectal cancer prevalence to serum levels of perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) in a large Appalachian population. BMC Cancer 2014;14:45.

Geiger SD, Xiao J, Ducatman A, Frisbee S, Innes K, Shankar A. The association between PFOA, PFOS and serum lipid levels in adolescents. Chemosphere 2013. Epub Nov 13, 2013 doi: 10.1016/j.chemosphere.2013.10.005.

Alshaarawy O, Zhu M, Ducatman A, et al: Polycyclic aromatic hydrocarbon biomarkers and serum markers of inflammation. A positive association that is more evident in men. Environ Res 2013;126:98-104,

Javins B, Hobbs G, Ducatman A, Pilkerton C, Tacker D, Knox S. Circulating maternal perfluoroalkyl substances during pregnancy in the C8 health study. *Environmental Science & Technology*. 2013 Jan8 [Epub ahead of print] PMID; 23272997.

Bhardwaj R, Ducatman A, Finkel MS, Petsonk E, Hunt J, Beto RJ. Chronic pulmonary dysfunction following acute inhalation of butyl acrylate. *West Virginia Medical Journal* 2012; 108:28-32.

Abraham RT, Walls RT, Fischer M, et al: Tabletop scenarios for realism in bioterrorism and threat preparedness. W V Med J 2012; 108:12-17

Luo J, Chen YJ, Narsavage GL, Ducatman A. Predictors of survival in patients with non-small cell lung cancer. *Oncol Nurs Forum* 2012; 39(6):609-16.

Shankar A, Xiao J, Ducatman A. Perfluorooctanoic acid and cardiovascular disease in US adults. Arch Intern Med 2012; 172: 1397-1403.

Hendryx M, Ducatman A, Zullig K, Ahern M, Crout R. Adult tooth loss for residents of us coal mining and Appalachian counties. Community Dent Oral Epidemiol 2012: 40: 488-97.]

Gallo V, Leonardi G, Genser B, Lopez-Espinosa MJ, Frisbee SJ, Karlsson L, Ducatman AM, Fletcher T. Serum perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS) concentrations and liver function biomarkers in a population with elevated PFOA exposure. Environ Health Perspect 2012; 120:655-60.

Bhardwaj R, Dod H, Finkel MS, Dar I, Hobbs GR, Ducatman AM, Warden B, Gharib W, Beto RJ, Jain AC. Left atrial volume by echocardiography in patients with false positive myocardial perfusion scans. International Heart Journal 2012; 53:18-22.

Cain LR, Ducatman AM, Shankar A. The relationship between gamma-glutamyl transferase levels and chronic kidney disease among Appalachian adults. West Virginia Medical Journal 2012; 108(1):8-13.

Shankar A, Xiao J, Ducatman A. Perfluoroalkyl chemicals and elevated serum uric acid in US adults. Clinical Epidemiology 2011; 3:251-258.

Luo J, Hendryx M, Ducatman A. Association between six environmental chemicals and lung cancer incidence in the United States. J Environ Public Health 2011; 463701. Doi: 10.1155/2011/463701 Epub 2011 Jul 10.

Knox SS, Jackson T, Frisbee SJ, Javins B, Ducatman AM. Perfluorocarbon exposure, gender, and thyroid function in the C8 Health Project. Journal of Toxicological Sciences 2011; 36(4): 403-410.

Innes KE, Ducatman AM, Luster MI, Shankar A. Association of osteoarthritis to serum perfluorooctanoate and perfluorooctane sulfonate in a large Appalachian population. Am J Epidemiol 2011; 174(4):440-450.

Shankar A, Xiao J, Ducatman A. Perfluoroalkyl chemicals and chronic kidney disease in US adults. Am J Epidemiol 2011; 174(8):893-900.

Ahern, M.M., Hendryx M, Conley J, Fedorko E, Ducatman A, Zullig KJ. The association between mountaintop mining and birth defects among live births in central Appalachia, 1996–2003. Environ Res 2011; 111(6): 838-46.

Lopez-Espinosa, MJ, Fletcher T, Armstrong B, Genser B, Dhatariya K, Mondal D, Ducatman A, Leonardi G. Association of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) with age of puberty among children living near a chemical plant. Environ Sci Technol 2011; 8160-6.

Shankar A, Jie X, Ducatman A. Perfluoroalkyl chemicals and chronic kidney disease in US adults. American Journal of Epidemiology 2011 10.1093/aje/kwr/171.

Knox SS, Jackson T, Javins B, Frisbee SJ, Shankar A, Ducatman AM. Implications of early menopause in women exposed to perfluorocarbons. Journal of Clinical Endocrinology and Metabolism June 2011; 96(6): 1747-53.

Sivak-Callcott JA, Diaz SR, Ducatman AM, Rosen CL, Nimbarte AD, Sedgeman JA. A survey study of occupational pain and injury in ophthalmic plastic surgeons. Ophthal Plast Reconstr Surg 2011; 27(1): 28-32.

Jin C, Sun Y, Islam A, Ducatman A, Qian Y. Perfluoroalkyl acids including perfluorooctane sulfonate and perfluorohexane sulfonate in firefighters. J Occup Environ Med 2011; 53(3):324-28.

Rockett IR, Hobbs G. De Leo D, Stack S, Frost J, Ducatman AM, Kapusta ND, Walker RL. Suicide and unintentional poisoning mortality trends in the United States, 1987-2006: Two unrelated phenomena? BMC Public Health 2010; 10:705.

Blake KB, Shankar A, Madhavan SS, Ducatman A. Associations among cardiometabolic risk factor clustering, weight status and cardiovascular disease in an Appalachian population. Journal of Clinical Hypertension 2010; 12(12):964-972.

Frisbee SJ, Shankar A, Knox S, Steenland K, Savitz DA, Fletcher T, Ducatman AM. Perfluorooctanoic acid, perfluorooctanesulfonate, and serum lipids in children and adolescents. Archives of Pediatric and Adolescent Medicine 2010; 164(9):860-869.

Teppala S, Shankar A, Ducatman A. The association between acculturation and hypertension in a multiethnic sample of US adults. Journal of the American Society of Hypertension 2010; 4(5): 236-43.

Rockett IR, Wang S, Stack S, De Leo D, Frost JL, Ducatman AM, Walker RL, Kapusta ND. Race/ethnicity and potential suicide misclassification: window on a minority suicide paradox? BMC Psychiatry 2010; 10:35-42.

Steenland K, Tinker S, Shankar A, Ducatman A. Association of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) with uric acid among adults with elevated community exposure to PFOA. Environ Health Perspect 2010; 118:229-33.

Qian Y, Ducatman A, Ward R, Leonard S, Bukowski V, Guo NL, Shi X, Vallyathan V, Castranova V. Perfluorooctane sulfonate (PFOS) induces reactive oxygen species (ROS) production in human microvascular endothelial cells: role in endothelial permeability. Journal of Toxicology & Environmental Health, Part A, 2010; 73:12, 819-836.

Teppala S, Shankar A, Li J, Wong T, Ducatman A. Association between serum gamma-glutamyl transferase and chronic kidney disease among US adults. Kidney and Blood Pressure Research 2010; 33:1-6.

Cain L, Shankar A, Ducatman AM, Steenland K. Association between serum uric acid and chronic kidney disease among Appalachian adults. Nephrology, Dialysis & Transplantation 2010; 25(11):3593-3599.

Steenland K, Tinker S, Frisbee S, Ducatman A, Vaccarino V. Association of perfluorooctanoic acid and perfluorooctane sulfonate with serum lipids among adults living near a chemical plant. American Journal of Epidemiology 2009; 170:1268-1278.

MacNeil J, Steenland K, Shankar A, Ducatman A. A cross-sectional analysis of type II diabetes in a community with exposure to perfluorooctanoic acid (PFOA). Environ Res 2009; 109:997-1003.

Frisbee S, Brooks AP, Maher A, Flensborg P, Arnold S, Fletcher T, Steenland K, Shankar A, Knox S, Pollard C. Halverson J, Vieira V, Jin C, Leyden K, Ducatman A. The C8 Health Project: design, methods, and participants. Environ Health Perspect 2009; 117(12): 1873-1882.

Steenland K, Jin C, MacNeil J, Lally C, Ducatman A, Vieira V, Fletcher T. Predictors of PFOA levels in a community surrounding a chemical plant. Environ Health Perspect 2009; 117:1083-88.

Rockett IR, Lian Y, Stack S, Ducatman AM, Wang S. Discrepant comorbidity between minority and white suicides: a national multiple-cause-of-death analysis. BMC Psychiatry 2009; 9:10.

Charumathi S, Shankar A, Li J, Pollard C, Ducatman A. Serum gamma-glutamyl transferase level and diabetes mellitus among US adults. Eur J Epidemiol 2009; 24:369-73.

Sun C, Jin C, Martin C, Gerbo R, Wang Y, Atkins J, Ducatman AM. Cost and outcome analyses on the timing of the first independent medical evaluation in patients with work-related lumbosacral sprain. J Occup Environ Med 2007; 49:1264-8.

Haut MW, Kuwabara H, Ducatman AM, et al. Corpus callosum volume in railroad workers with chronic exposure to solvents. J Occup Environ Med 2006; 48(6): 615-24.

Harber P, Ducatman AM. Training pathways for occupational medicine. J Occup Environ Med 2006; 48: 366-75.

Ducatman BS, Ducatman AM. Longitudinal case-based evaluation of diagnostic competency among pathology residents: a statistical approach. Arch Pathol Lab Med 2006; 130: 188-93.

Ducatman AM, Vanderploeg JM, Johnson M, et al. Residency training in preventive medicine: challenges and opportunities. Am J Prev Med 2005; 28: 403-412.

Ducatman BS, Ducatman AM. How expert are the experts? Implications for proficiency testing in cervicovaginal cytology (editorial). Arch Pathol Lab Med 2005; 129: 604-605.

Jin CH, Haut M, Ducatman AM. Industrial solvents and psychological effects. Clin Occup Environ Med 2004; 4: 597-620.

Martin CT, Werntz CL, Ducatman AM. The interpretation of zinc protoporphyrin changes in lead intoxication: a case report and review of the literature. Occupational Medicine 2004; 54 (7): 587-591.

Erdogan MS, Islam SS, Chaudhari A, Ducatman AM. Occupational carbon monoxide poisoning among West Virginia workers' compensation claims: diagnosis, treatment duration, and utilization. J Occup Environ Med 2004, 46(6) 577-83.

Ehrlich PF, McLellan WT, Ducatman AM, Helmkamp JC, Islam SS. Understanding work-related injuries in children: a perspective in West Virginia using the state-managed workers' compensation system. J Pediatric Surgery 2004; 39: 768-772.

Abdul-Razzaq WN, Lee V, Islam S, Ducatman AM. Quantification of lead in telephone cord: use of x-ray photoelectron spectroscopy technique. Appl Occup and Env Hygiene. 2003. 18: 553-557.

Islam SS, Edla S. Mujuru P, Doyle EJ, Ducatman AM. Risk factors for physical assault: state-managed workers' compensation experience. Am J Prev Med 2003; 25:31-37.

Li H, Wang M-L, Seixas N, Ducatman AM, Petsonk EL. Respiratory protection: associated factors and effectiveness of respirator use among underground coal miners. Am J Indus Med 2002; 42: 55-62.

Ducatman AM. ATDSR Case Studies in Environmental Medicine. Disease clusters: an overview. USDHHS/ATDSR. Course SS3096. August 2002. Document also available online at www.atsdr.cdc.gov/HEC/CSEM.

Ducatman AM. Educational module "Lead, it's everywhere." With the support of the American Occupational and Environmental Clinics (AEOC) and National Institute for Occupational Safety and Health (NIOSH), Cooperative Agreement U60/CCU317613-03, for a seminar/presentation at AEOC in 2002. Also available on CD-ROM, and via e-mail at AOEC@aoec.org and on-line at www.aoec.org

Islam SS, Biswas RS, Nambiar A, Syamlal G, Velilla AM, Doyle EJ, Ducatman AM. Incidence of work-related fracture injuries: experience of a state-managed workers' compensation system. J Occup Environ Med 2001; 43: 140-146.

Islam SS, Velilla AM, Doyle EJ, Ducatman AM. Gender differences in work-related injury/illness: analysis of workers' compensation claims. Am J Indus Med 2001; 38: 84-91.

Hogan T, Lamm D, Ducatman AM. Smoking and renal cell carcinoma. WV Med J 2001; 97: 32-5.

Hogan T, Lamm D, Riggs D, Ducatman AM. Smoking and bladder cancer. WV Med J 2001; 97: 29-31.

Ducatman AM, McLellan R. American College of Occupational and Environmental Health Position Statement. Epidemiologic basis for an occupational and environmental policy on environmental tobacco smoke. J. Occup Environ Med 2000; 42: 575-581.

Franklin P, Goldenberg WS, Ducatman AM, Franklin E. Too Hot to Handle: An Unusual Exposure of HDI in Specialty Painters. Am J Indus Med 2000; 37: 431-437.

Islam SS, Doyle EJ, Velilla AM, Martin CJ, Ducatman AM. Epidemiology of compensable work-related ocular injuries and illnesses: incidence and risk factors. J Occup Environ Hlth 2000; 42: 575-581.

Islam SS, Nambiar AM, Doyle EJ, Velilla AM, Biswas RS, Ducatman AM. Epidemiology of work-related burn injuries: experience of a state-managed workers' compensation system. J Trauma 2000; 49: 1045-51.

Haut MW, Leach S, Kuwabara H, Whyte A, Ducatman AM, Lombardo LJ, Gupta N. Verbal working memory and solvent exposure: a position emission tomography study. Neuropsychology 2000; 14: 551-8.

Meyer JD, Becker PE, Stockdale T, Ducatman AM. The West Virginia Occupational Safety and Health Initiative: Practicum Training for a New Marketplace. Am J Prev Med 1999. 16(4): 347-350.

McClellan R, Becker CE, Borak J, Coplein C, Ducatman AM, et al. American College of Occupational & Environmental Medicine Position Statement. Multiple chemical sensitivities; idiopathic environmental intolerances. ACOEM Position Statement. J Occup Environ Med 1999; 41: 940-942.

Westra CS, Ducatman AM, Niewiadonska-Bugaj M, Hobbs GR. An estimate of prostate cancer prevalence for a demographically similar workforce population. WV Med J 1999; 95:116-122

Cohen A, Ducatman AM. Employing self-directed computer and printed resources to reform a medical school, epidemiology and biostatistics curriculum. Medical Education Outline (On-line) July, 1998

Magnetti SM, Wyant W, Greenwood J, Roder N, Linton J, Ducatman AM. Injuries to volunteer firefighters in West Virginia. J Occup Environmental Med. 1999 Feb; 41 No. 2: 104-110.

Simoyi P, Islam S, Haque A, Meyer J, Doyle EJ, Ducatman AM. Evaluation of occupational injuries among young workers in West Virginia. Human Eval Risk Assess 1998; 4: 1405-15.

Bucklew NS, D'Alessandri R, Ducatman AM. The mentoring of the department chair: a new partnership model between the health sciences and business administration. Issues in the Cornerstone of Higher Education, 1998; 48:71-55 Vol. 48, pp. 71-75.

Meyer JD, Islam SS, Ducatman AM, McCunney RJ. Prevalence of small lung opacities in populations unexposed to dusts: a literature-analysis. Chest 1997; 111: 404-410.

Ducatman AM. Disease clusters: paradoxes of perception and public health (editorial). Int J Occup Environ Hlth 1995; 1:289-290.

Moore RS, Ducatman AM, Jozwiak JA. Home on the range: childhood lead exposure due to family occupation. Arch Pediatric Adolescent Med 1995; 149:1276-1277.

Boswell RT, DiBerardinis L, Ducatman AM. Descriptive epidemiology of indoor odor complaints at a large teaching institution. Appl Occup Environ Hyg 1994; 9:281-286.

Barbanel CS, Ducatman AM, Garston MJ, Fuller T. Laser hazards in research laboratories. J Occup Med 1993; 35:369-374.

Ducatman AM. Occupational physicians and environmental medicine. J Occup Med. 1993; 35:251-259.

Ducatman AM. On "B-reading," radiology, the ILO system, and dust-related diseases. Applied Radiology 1993; 22: 72-73.

Fleming LE, Ducatman AM, Shalat SL. Disease clusters in occupational medicine: a protocol for their investigation in the workplace. Am J Indus Med 1992; 22: 33-47.

Perry GF, Hawes Clever L, Ducatman AM, et al. Scope of occupational and environmental health programs and practice. J Occup Med 1992; 34:436-440.

Fleming LE, Ducatman AM, Shalat SL. Disease clusters: a central and ongoing role in occupational medicine. J Occup Med 1991; 33:818-825.

Ducatman AM. Variability in interpretation of radiographs for asbestotic abnormalities: problems and solutions. Annals NY Acad Sci 1991; 643:108-120.

Stinson MC, Green BL, Marquardt CJ, Ducatman AM. Autoclave inactivation of infectious radioactive laboratory waste contained within a charcoal filtration system. Health Physics 1991; 61:137-142.

Ducatman AM, Forman SA, Teichman R, Gleason R. Occupational physician staffing in large U.S. corporations. J Occup Med 1991; 32:613-618.

Ducatman AM. Cost-shifting in workers' compensation: methods, money, and meaning (editorial). Am J Indus Med 1991; 19:279-282.

Ducatman AM, Chase KH, Farid I, et al. What is environmental medicine? (Editorial). J Occup Med 1990; 32:1130-1132.

Ducatman AM, Withers B, Yang WN. Smoking and roentgenographic opacities in U.S. Navy asbestos workers. Chest 1990; 97:810-813.

Stinson MC, Galanek MS, Ducatman AM, et al. Model for inactivation and disposal of infectious human immunodeficiency virus and radioactive waste in a P3 facility. Applied and Environmental Microbiology 1990; 56: 264-268.

Withers B, Ducatman AM, Yang WN. Roentgenographic evidence for predominant left-sided location of unilateral pleural plaques. Chest 1989; 95:1262-1264.

Ducatman AM. Career options of occupational physicians. J Occup Med 1988; 30:776-779.

Ducatman AM, Yang WN, Forman SA. “B-readers” and asbestos medical surveillance. J Occup Med 1988; 30:644-647.

Committee Report (Lewy R, Anstadt GW, Curtis EC, Ducatman AM, et al.) AIDS in the workplace: guidelines. J Occup Med 1988; 30:578-579.

Ducatman AM, Ducatman BS, Barnes JA. Lithium battery health hazard: old-fashioned planning implications of new technology. J Occup Med 1988; 30:309-311.

Ducatman AM, Bigby M. Systemic contact dermatitis after inhalation of 2-aminothiophenol. Contact Derm 1988; 18:57-58.

Ducatman AM, Crawl JR, Conwill CE. Cancer clusters, causation, and common sense. CHEMTECH (American Chemical Society) 1988; 18:204-210.

Garland FC, Gorham ED, Garland CF, Ducatman AM. Testicular cancer in U.S. Navy personnel. Am J Epidemiol 1988; 127:411-414.

Ducatman AM. Inevitable growth of workers’ compensation. Best’s Review Property/Casualty Insurance 1987; 88:50-53.

Ducatman AM. Workers’ compensation cost-shifting: a unique concern of providers and purchasers of prepaid health care. J Occup Med 1986; 28:1174-1176.

Ducatman AM, Conwill DE, Crawl J. Germ cell tumors of the testicle among military aircraft repairmen. J Urol 1986; 136:834-836.

Ducatman AM, Moyer TP. Environmental exposure to common industrial solvents. Therapeutic Drug Monitoring, American Association for Clinical Chemistry, Washington, D.C., Vol 5, May 1984.

Ducatman AM, Moyer TP. The role of the clinical laboratory in the evaluation of the polyhalogenated-polycyclic toxins: DDT, PBBs, dibenzodioxins and dibenzofurans, chlordecone (Kepone) and hexachlorophene. Therapeutic Drug Monitoring, American Association for Clinical Chemistry, Washington, D.C., Vol 4, Jan 1983.

Ducatman AM, Moyer TP. Clinical laboratory role in the evaluation of the patient exposed to acetylcholinesterase-inhibiting pesticides. Therapeutic Drug Monitoring, American Association for Clinical Chemistry, Washington, D.C., Vol 4, Jan. 1983.

Ducatman AM, Amundsen MA, Moyer TP. Case report: Evaluation of the role of organophosphate pesticides. Therapeutic Drug Monitoring, American Association for Clinical Chemistry, Washington, D.C., Vol 3, July 1982.

Ducatman AM, Hirschhorn K, Selikoff IJ. Vinyl chloride exposure and human chromosome aberrations. Mutation Research 1975; 31:163-168.

Web Communications

Ducatman A, Frisbee S, Stanley S, Shankar S, Knox S, Pollard C, Hobbs G, Firestone C, Mutambudzi M, Bunner E, Halverson J, Jin C, Leyden K, Tan J, Wang X, Wang Y. The C8 Health Project: WVU data-hosting website. Documents and summaries of results for the C8 Health Project. (Contains thousands of graphs and tables.) 2007 to 2013. http://publichealth.hsc.wvu.edu/c8/.

Letters and Other Documents

- Ducatman A. Ebola article highlights EHR usability problems. TechTarget. Nov 12, 2014. Available at http://searchhealthit.techtarget.com/opinion/Ebola-article-highlights-EHR-usability-problems-says-doc
- Harber P, Ducatman AM. Training pathways for occupational medicine (response). *J Occup Environ Med* 2006; 48: 1115.
- Ducatman AM. Comparison of B readers' interpretations of chest radiographs for asbestos-related changes. Academic Radiology 2004; 11: 1398-99.
- Mitchell CS, Moline J, Avery AN, Blessman JE, et al. (Authors include Ducatman AM.) In response to the 2002, Vol 22, No. 4 article entitled: The rise and fall of occupational medicine in the US. Am J Prev Med 2002; 23:307-309.
- Frumkin H, Ducatman AM, Kirkland K. Solvent exposure in the railroad industry. J Occup Environ Med 1997; 39: 926-30.
- Ducatman AM. Preventive pulmonary medical education (ltr). Chest. 1992; 102:326.
- Ducatman AM, Farber SA. Radium exposure in U.S. military personnel (ltr). NEJM. 1992; 326:71.
- Bakshi R, Ducatman AM, Hochberg FH. Glioblastomas in New England ophthalmologists (ltr). NEJM. 1991; 324:1440-1441.
- Masse FX, Coutu-Reilly J, Galanek M, Ducatman AM. The need for additional warning in x-ray diffraction equipment: a shutter failure incident (ltr). Health Physics. 1990; 58; 219.
- Ducatman BS, Wang HH, Jonasson JG, Ducatman AM. Cervical screening (ltr). Lancet 1989; 11: 628-629.
- Ducatman AM. Roentgenographic underestimation of early asbestosis (ltr). Chest 1989; 95:1165.
- Ducatman AM. Dimethylformamide, metal dyes, and testicular cancer (ltr). Lancet 1989; 1:911.
- Ducatman AM. Prader-Willi syndrome and paternal hydrocarbon exposure (ltr). Lancet 1988; 1:641.
- Ducatman AM. Industrial toxins and fulminant hepatitis (ltr). Mayo Clinic Proc 1985; 60:640.

Guidelines

Sokas R, Fagan K, Ducatman AM. Medical Management Guidelines for Lead-Exposed Adults. American Occupational and Environmental Clinics. www.aoec.org/principles.htm.

Abstracts

Darrow MA, Ducatman BS, Hashmi M, Flanagan M, Long D, Ducatman AM. Look before you "LEEP." A retrospective quality assurance study. 103rd Annual Meeting of the United States and Canadian Academy of Pathology, San Diego, CA, March 7, 2014

Frisbee SJ, Frisbee JC, Ducatman AM. Abstract P380. Obesity and non-alcoholic fatty liver disease in children. Circulation 2012; 125: AP380. Available at: https://circ.ahajournals.org/cgi/content/meeting_abstract/125/10_MeetingAbstracts/AP380

Geiger S, Shankar A, Ducatman A. Association between Serum PFOA Levels and Hyperuricemia in Children. Presented at the 3rd North American Congress of Epidemiology, June 21-24, 2011, in Montreal, Canada.

Frisbee SJ, Frisbee JC, Shankar A, Knox, SS, Ducatman AM. Associations between obesity and obesity-related systemic inflammation and markers of immune function in children. Presented to the American Heart Association, March 23, 2011.

Frisbee SJ, Frisbee JC, Shankar A, Knox, SS, Ducatman AM. Contribution of Dyslipidemia vs. obesity to inflammation in children. Presented to the American Heart Association, March 23, 2011.

Frisbee SJ, Shankar A, Knox, SS, Ducatman AM. Associations between non-8-carbon-chain perfluoroalkyl acids and cholesterol in children. Presented to the American Heart Association, March 23, 2011.

Hendryx M, Crout R, Ducatman AM, Zullig K, Ahern M. Tooth loss among residents of Appalachian coal-mining counties. Presented to the American Public Health Association annual meeting, November 2010.

Rockett, IRH, Hobbs G, De Leo D, Stack S, Ducatman AM, Frost J. Relationship of suicide and unintentional poisoning mortality trends in the United States, 1987-2006. Presented to the American Public Health Association annual meeting, November 2010.

Rockett IRH, Wang S, Stack S, De Leo D, Frost J, Ducatman AM, Walker R. Race/ethnicity and potential suicide misclassification: window on a minority suicide paradox? Presented to the American Public Health Association annual meeting, November 2010.

Qian Y, Ducatman A, Leonard S, Ward R, Vallyathan V, Castranova V. PFOA- and PFOS-induced oxidative stress response in human microvascular endothelial cells. Society of Toxicology Annual Meeting, Salt Lake City, UT, March 7-11, 2010.

Cain L, Ducatman A, Shankar A. The relationship between uric acid and chronic kidney disease. *Am J Epidemiol* 2009; 169(suppl): 397-S.

Rockett IRH, Lian Y, Stack S, Ducatman AM, Wang S. Discrepant comorbidity between minority and white suicides: a national multiple-cause-of-death analysis. Population Association of America Annual Meeting, Detroit, MI, May 1, 2009.

Blake K, Shankar A, Madhavan S, Ducatman AM. Prevalence of obesity and other cardiac risk factors in an Appalachian region. WVU Health Sciences Center Research Day and Van Liere Convocation, April 28-29, 2009. Also presented to the annual meeting of the American Public Health Association, November 7-11, 2008.

Teppala S, Sabanayagam S, Shankar A, Ducatman A. Association between sleep duration and cardiovascular disease among US adults. WVU Health Sciences Center Research Day and Van Liere Convocation, April 28-29, 2009. Also presented to the annual meeting of the American Public Health Association, November 7-11, 2008.

Peluso E, Haut M, Morrow L, Ducatman A, Kuwabara H. Hippocampal volume and functional brain abnormalities associated with chronic organic solvent exposure. Poster presented at the 2008 American Academy of Clinical Neuropsychology convention, Boston, MA, June 2008.

Gerber BJ, Scotti JR, Althouse R, Ducatman AM, Fischer M. Behavioral response of large populations to disaster and terrorism: where will they go? International Society for Traumatic Stress Studies, Baltimore, MD. ISTSS Conference Tracking ID 180248. Poster Session 3, November 17, 2007.

Haut M, Hatfield G, Kuwabara H, Morrow L, Parsons M, Ducatman AM. Solvent-related neuroimaging changes in railroad workers. International New Psychological Society Meeting, February 25, 2005. St. Louis, MO.

Islam S, Hassan M, Doyle E. Becker J, Weikle P, Ducatman A. Quantification of suspected addiction treatment of narcotic analgesics using prescription sequence analysis. Experience of a state-based workers' compensation system (abstr). International Society for Pharmacoeconomic and Outcome Research, Hamburg, Germany. October 25, 2004. Appeared in Value in Health 2004:7:727-8.

Goldberg RL, Vanderploeg J, Wald P, Ducatman AM. American Board of Preventive Medicine Certification Procedure. American Occupational Health Conference, April 29, 1999, New Orleans.

Ducatman AM, Lane DS, Johnson MB, Etzel RA. Preventive Medicine Certification and Recertification. Prevention '99, March 19, 1999, Arlington, VA.

Haut MW, Whyte S, Callahan TS, Ducatman, AM, et al. Verbal working memory in solvent exposure: a PET activation study. Intl neuropyschological society. Honolulu, HI, Feb 6, 1998.

Lombardo LJ, Meyer JD, Haut MW, Islam SS, Haque A, Ducatman AM. The health effects of solvent exposure in railroad workers. J Occup Environ Med 1997; 39:363.

Simoyi P, Islam S, Haque A, Ducatman AM. Evaluation of Occupational injuries among teenage workers in West Virginia. National Occupational Injury Research Symposium (NIOSH), Morgantown, WV, October 15, 1997.

Islam S, Hobbs G, Murray W, Suppa S, Ducatman, AM. Use of Narcotic and Non-Narcotic Analgesic Medications in occupational injuries: analysis of reimbursed prescriptions in a state run Workers' Compensation Database. National Occupational Injury Research Symposium (NIOSH). Morgantown, WV, October 15, 1997.

Islam S, Hobbs G, Haque A, Greenwood J, Bowers C, Ducatman AM. Differences in occupational injuries by gender in West Virginia: Analysis of Workers' Compensation Claims in Database. National Occupational Injury Research Symposium (NIOSH), Morgantown, WV, October 15, 1997.

Haut MW, Ducatman AM, Morrow L, Eckert RK. Neuropsychological functioning in railroad workers exposed to organic solvents. J Intl Neuropsych Soc 1996; 2: 63.

Ducatman AM, Simoyi RM, Emmett MS. Needs of prevention researchers West Virginia. CDC Prevention Center Meeting. Atlanta, GA. February 16-18, 1995.

Simoyi PM, Ducatman AM, et al. Protection and regulatory awareness of Appalachian workers. CDC Prevention Center Meeting. Atlanta, GA. February 16-18, 1995.

Martin KP, Ducatman AM. Actual vs. reported chance of encountering nonchrysotile asbestos types in O & M activities. Health Effects Institute-Asbestos Research, March 8-9, 1995.

Stinson M, Green B, Ducatman AM. Autoclave inactivation of infectious radioactive laboratory waste contained within a charcoal filtration system. 1990 ASM Annual Meeting. Anaheim, CA, May 13-17.

Ducatman AM, Ducatman BS, Barnes JA. Lithium battery health hazard. Aviation, Space and Environ Med 1986; 57:1216.

Ducatman AM. Clusters associated with chemical exposures, their significance and causation. Amer Chem Soc 193rd meeting abstracts. CHAS 46.

Liberman DF, Fink R, Ducatman AM. The evaluation of toxicity of chemicals and associated health risks for nontechnical workers in biotechnology facilities. International Symposium on Health and Environment in Developing Countries. Haikko, Finland, August 27-30, 1986.

Garland FC, Gorham BA, Garland CF, Ducatman AM. Testicular cancer in U.S. Navy personnel. Am J Epidemiol 1986; 124: 531.

Book Reviews

- Ducatman A. Airborne Hazards Related to Deployment (Book Review). J Occup Environ Med 2016; 58(2): e60
- *Coal River*, by Michael Shnayerson, in the Journal of Occupational and Environmental Medicine 2008; 50:856-7.
- Environmental and Occupational Medicine, 2nd Ed in J Occup Med 1993; 35:1069-1070.
- Dermatotoxicology, 4th ed. in J Occup Medicine 1992; 34:1126-1127.

Occupational Medicine Forum: Published in the Journal of Occupational Medicine (major contributions listed).

Lerner AJ, Belleville B, Cassidy S, Hawes Clever L, Conage T, Ducatman AM, et al.

Can jet injector devices transmit pathogens?	1999; 41: 553-4

Lerner PJ, Belleville B, Hawes Clever L, Ducatman, AM, et al.

Can heavy lifting cause epididymitis?	1997; 39:609-610

Whorton D, Weisenberger BI, Milroy WC, Hawes Clever L, Ducatman AM, et al.

Health effects of oxygenated fuels	1993; 35:980
X-ray technician with ulcerative colitis	1993; 35:650-652
Contact lenses in the chemical industry	1993; 35:650-652
Pros and cons of vaccinia immunization	1992; 34:757-758
Trichloroethane and connective tissue disorders	1992; 34:5-8
In-house medical officers	1991; 33:1206
Hepatitis B Immunization	1991; 33:845

Perry GF, Brissendon R, Chase KH, Hawes Clever L, Ducatman AM, et al.

Benzene and Hodgkin's Lymphoma	1990; 32:775
"Environmental Illness"	1990; 32:211
Hepatitis B Vaccination	1990; 32:5
OSHA and the pharmaceutical and biomedical industries	1989; 31:955-956
Risks of Xylene Substitute	1989; 31:202
Headaches in a bookbinding/ Screen-making company	1989; 31:422-423
Reading asbestos exposure films	1989; 31:728-731

Anstadt GW, Baker EL, Bender JR, Chase KH, Hawes Clever L, Ducatman AM, et al.

Contamination from photocopiers	1988; 30:762-766
QMS - Lasergrafix RSI 8024 printer	1987; 29:692
Cutting, sanding, and heat welding polyvinyl chloride	1987; 29:693
Guidelines for use of respirators during pregnancy	1987; 29:782-786
Bacterial growth in eyewash stations	1987; 29:854

Anstadt GW, Chase KJ, Hawes Clever L, Ducatman AM, et al.

Chemical components of diesel fuel	1987; 29:13-14
Vanadium pentoxide exposure	1987; 29:14-17
Screening for hepatic damage	1987; 29:266-267
Research chemist with chronic lymphocytic leukemia	1987; 29:268-269
The costs of defensive medicine	1986; 28:1132-1136

Federal Testimony

United States Senate, Subcommittee on Clean Air and Nuclear Regulation. Re: Nasopharyngeal Radiation of Military and Civilian Populations. Invited by Senator Joseph I. Lieberman, Sept. 27, 1994.

Court-Appointed Advisory Panel, United States District Court, Eastern and Southern Districts of New York. Re: Johns-Manville Corporation Personal Injury Settlement Trust and Populations of U.S. Asbestos Victims, 1991-1994.

Department of Labor 29CFR1910. Occupational Exposure to Hazardous Chemicals in Laboratories; Final Rule, January 31, 1990; 55 (21): 3314.

Areas of Research Interest

1. Clinical Quality Improvement, with an emphasis on laboratory orders and interdisciplinary teamwork for improvement

2. Occupational/Environmental epidemiology and toxicology, including:

- Perfluorocarbons
- Neurotoxicity
- Environmental health and endocrine disruption
- Use of administrative data in health services research, including workers' compensation
- Training and evaluation in preventive medicine and public health
- Disease Clusters

Certificates

Certificate of Completion NIH Office of Human Studies Research computer-based training course on the Protection of Human Subjects, September 1, 2000, Serial: 967812471. Updated continuously as CITI training.

Annual HIPAA and compliance training.

RESEARCH SUPPORT

Submitted in 2016:

Source: US Environmental Protection Agency
Title: Investigating if Unconventional Oil and Gas Development in the Appalachian Region Impacts Environmental Health
Role: Co-Investigator
Outcome: Funding outcome anticipated May, 2017

Source: USDHHS-NIH-NIEHS
Title: Cove Point Maryland Liquefied Natural Gas Facility Project
Role: Co-investigator
Outcome: Not funded

Source: CDC-ATSDR
Title: Brownfield-to-Trail Redevelopment

Role: Co-investigator
Outcome: Approved, not funded

Completed

National

Source: NIH/University of Pittsburgh (primary), WVU subrecipient of NIH grant
Title: National Children's Health Study
Period: 9/28/08-9/29/09
Amount: $673,725
Role: Co-investigator (10%)

Source: NIH/University of Pittsburgh (primary), WVU subrecipient of NIH grant
Title: National Children's Health Study
Period: 9/27/07-9/28/08
Amount: $455,467
Role: Co-investigator (10%)

Source: NIOSH/Johns Hopkins University, WVU subrecipient of University of Maryland grant
Title: Occupational Injuries of Developmentally Disabled Sheltered-Workshop Workers in West Virginia
Period: 10/30/07-10/2/09
Amount: $1,000
Role: Co-investigator

Source: Office of Domestic Preparedness
Title: VMC Development Project for Online Training, Access, and Knowledge Resources for Weapons of Mass Destruction: IOC Phase
Amount: $1,360,959
Period: 9/1/03-3/31/05
Role: Co-Investigator (6 percent)

Source: USDHHS
Title: West Virginia Prepares: CE Education Partnership
Amount: $2,242,659
Period: 9/30/02-9/29/05
Role: Co-Investigator (10 percent)

Source: CDC/NIOSH (contract 256809)
Title: Review Database of Chemicals Used in Coal Preparation
Amount: $2400
Period: 2001-2002
Role: Principal Investigator

Source: CDC/NIOSH & University of Pittsburgh (RO1 OHO3646-01A2)
Title: Solvent-Related Functional Brain Abnormalities
Amount: $227,822
Period: 2001-2004
Role: Co-Investigator (5%)

Source: Department of Health and Human Services (DHHS 233-01-0064)
Title: Online Course and Knowledge Base for Improving Local-Level First and Emergency Responders' Coordination of Healthcare Response and Consequence Management for Weapons of Mass Destruction (Virtual Medical Campus)

Period: 10/1/02-3/31/04
Amount: $258,372
Role: Co-Investigator (10%)

Source: CDC/UNC
Title: SE Public Health Training Center Project
Period: 9/1/01-8/31/05
Amount: $47,000
Role: Co-Investigator; WVU-PI Subrecipient agreement (5%)

Source: CDC (H75/CCH322130)
Title: Center for Healthy Communities
Period: 2002-2003
Amount: $1,997,974
Role: Co-Investigator (5%)

Source: CDC/NIOSH (T01/CCT/310455-09)
Title: New Directions in Occupational Health
Period: 2001-2005
Amount: $292,000/yr (7/1/02-6/30/03)
Role: Co-Investigator (10%)

Source: NIOSH
Title: New Directions in Occupational Health
Period: 1997-2001
Amount: $403,419/yr.
Role: Principal Investigator

Source: Centers for Disease Control and Prevention
Title: Work Organization and Depression
Period: 1998-2000
Amount: $106,923
Role: Co-Investigator and Subrecipient Agreement with University of Maryland

Source: Environmental Protection Agency
Title: Occupational Asthma: in and out of the workplace (national conference)
Period: 1998
Amount: $7,166
Role: Principal Investigator

Source: National Institute for Occupational Safety and Health
Title: Workshop on Solvent Exposure among Railroad Workers
Period: 1996 (Nov 7-8)
Amount: $25,000
Role: Co-Investigator (AOEC grant)

Source: National Institute for Occupational Safety and Health **-** R13/CCR312621-01
Title: Educational Conference on Occupational Safety and Health for Small Business
Period: 1995-1996
Amount: $12,000 (+ additional state matching funds)
Role: Co-Principal Investigator

Source: National Institute for Occupational Safety and Health
Title: New Directions in Occupational Health Training - T01/CCT310455-01
Period: Fiscal Year 1994-1997
Amount: $488,460/year
Role: Principal Investigator, Director

Source: Centers for Disease Control and Prevention
Title: West Virginia University Prevention Center: Addressing the Risk Factors in Rural Appalachia
Period: 1994-1998
Amount: $100,000 of $1,000,000 grant
Role: Co-Investigator

Source: National Institute for Occupational Safety and Health
Title: National Environmental Education and Training Center
Period: 1994-1995
Amount: $13,500 of $86,500
Role: Co-Investigator

Source: Department of Energy, National Research Center for Coal & Energy
Title: Winfield, WV, Risk Communication
Period: 1994-1995
Amount: $10,000

Source: EPA Hazardous Substance Research Center
Title: Integrating Safety and Waste Management Practices in Laboratory Organizations
Period: January, 1991 - January, 1992
Amount: $42,664
Role: Principal Investigator

Source: DOE/Oak Ridge Associated Universities
Title: IND for DTPA
Period: 1990-1992
Role: Co Investigator

Source: EPA Hazardous Substance Research Center
Title: Hazardous Substance Management Program; Laboratory Safety Training Program - R-815734-01
Period: 3/89 - 3/90
Amount: $20,000
Role: Principal Investigator

State

Source: West Virginia Department of Health and Human Resources
Title: GEO-22: Coal Slurry ATSDR Assessment
Period: 4/1/09-3/31/10
Amount: $221,519
Role: Principal Investigator

Source: West Virginia Insurance Commission
Title: WVU Data Analysis Project
Period: 4/1/07-2/29/08
Amount: $242,627
Role: Principal Investigator

Source: West Virginia Insurance Commission
Title: WVU Data Analysis Project
Period: 1/1/07-12/31/07
Amount: $242,627
Role: Principal Investigator, 10% support

Source: West Virginia Higher Education Policy Commission
Title: Health Study of Hardy County

Period: 7/1/05-6/30/07
Amount: $250,000/yr
Role: Principal Investigator, 10% support

Source: WV Workers' Compensation Division
Title: Workers' Compensation Data Analysis
Period: 1/1/06-12/31/06
Amount: $454,277
Role: Principal Investigator, 10% support

Source: West Virginia Insurance Commission
Title: Insurance Commission-WVU Data Analysis Project
Period: 3/1/06-12/31/06
Amount: $165,683
Role: Principal Investigator, 10% support

Source: WV Workers' Compensation Division
Title: Medical Support Project
Period: 7/1/05-12/31/05
Amount: $353,104
Role: Clinician, 10% support

Source: WV Bureau of Employment Programs
Title: Workers' Compensation Data Analysis Project
Amount: $203,000
Period: 7/1/05-12/31/05
Role: Principal Investigator (10 percent support)

Source: WV Workers' Compensation Division
Title: Medical Support Project
Amount: $706,209
Period: 7/1/04-6/30/05
Role: Clinician (10 percent)

Source: WV Bureau of Employment Programs
Title: Workers' Compensation Data Analysis Project
Amount: $234,855
Period: 7/1/04-6/30/05
Role: Principal Investigator (10 percent, 8% FY 2005)

Source: WV Higher Education Policy Commission/WV Economic Development Office
Title: WVU Health Study of Hardy County
Amount: $250,000
Period: 7/1/03-6/30/05
Role: Principal Investigator (10%)

Source: WV Bureau of Employment Programs
Title: Workers' Compensation Data Analysis Project
Amount: $230,666
Period: 7/1/03-6/30/04
Role: Principal Investigator (10 percent)

Source: WV Bureau of Employment Programs
Title: WVU Transitional Medical Support Project
Amount: $500,019
Period: 7/1/03-6/30/04

Role: Co-Investigator (10 percent)

Source: WV Department of Health & Human Resources
Title: Childhood Lead Poisoning Prevention project
Period: 7/1/02-6/30/03
Amount: $10,000/yr (contract)
Role: Principal Investigator (5%)

Source: WV Workers' Compensation Division
Title: WVU-Office of Medical Services Support
Period: 1/1/99-6/30/02
Amount: $1,382,333/yr.
Role: Principal Investigator

Source: WV Department of Health & Human Services
Title: Childhood Lead Poisoning Prevention Project
Period: 7/01- 6/02
Amount: $8,071
Role: Principal Investigator

Source: WV Bureau for Employment Programs
Title: Enhanced Approach to Health Care Cost Data Systems and Analysis
Period: 7/1/02-6/30/03 - $348,416
1/01-12/01 - $139,945
1/99-12/01 - $378,850
Role: Co-Investigator through 2001; PI in 2002 (15%)

Source: WV Workers' Compensation Division
Title: Medical Support and Medical Services Contract
Period: 1/1/03-6/30/03
Amount: $813,355
Role: Co-Investigator (15%)

Source: WV Bureau of Employment Programs
Title: WVU-Office of Medical Services Support
Period: 1/01-6/30/03 - $1,382,333
1/01-12/01 - $1,291,726
1/99-12/01 - $3,473,939
Role: Co-Investigator through 2001, Principal Investigator in 2002 (10%)

Source: WV Bureau of Employment Programs
Title: Enhanced Approach to Health Care Cost Data Systems and Analysis
Period: 1/01-12/01 - $139,945
1/99-12/01 - $ 378,850
Role: Co-Investigator (5%)

Source: WV Bureau of Employment Programs
Title: Assisting Policy (Targeted Analysis Project)
Period: 7/02-12/02 - $220,614/yr
7/01-6/02 - $200,149
Role: Co-Investigator (5%)

Source: WV Workers' Compensation Division, Bureau of Employment Programs, RIA/WC Research
Title: Health Care Cost Data Systemization & Analysis Project
Period: 1999-2002
Amount: $812,039

Role: Principal Investigator

Source: WV Workers' Compensation Division
Title: Small Business Safety Outreach
Period: 1999-2002
Amount: $214,968/yr.
Role: Co-Investigator

Source: WV Workers' Compensation Division
Title: Targeted Analysis of Outcomes and Effectiveness of Workers' Health Care Services and Interventions
Period: 1999-2002
Amount: $163,977/yr
Role: Co-Investigator

Source: West Virginia Bureau of Employment & Education
Title: Evaluation of Managed Care Occupational Health Service
Period: 1996-99
Amount: $88,201
Role: Co-Investigator

Source: West Virginia Department of Health and Human Services, Bureau for Public Health, CDC grant
Title: Lead Poisoning Prevention
Period: 1998-2001
Amount: $10,000/yr
Role: Consultant

Source: West Virginia Department of Labor, Workers' Compensation Division
Title: Health Care Advisory Panel
Period: 7/92-7/98
Amount: $10,000/yr
Role: Occupational Medical Illness Protocol

Source: West Virginia Bureau of Employment
Title: Trend and Cluster Analysis
Period: 1996-98
Amount: $55,265
Role: Co-Investigator

Source: West Virginia Bureau of Employment
Title: Point of Sale Drug Utilization Review
Period: 1996-98
Amount: $55,815
Role: Co-Investigator

Source: West Virginia Bureau of Employment
Title: Vertically Integrated Intervention Access
Period: 1996-97
Amount: $284,492
Role: Principal Investigator

Corporate and Foundation

Source: Claude Worthington Benedum Foundation
Title: Interprofessional Education: Translating Research into Improved Practice in Rural Hospitals

Period: December 15, 2014 – Dec 15, 2015
Amount: $10,000
Role: Subrecipient co-principle investigator

Source: Health Effects Institute (Professional Services Agreement with WVU)
Title: Special scientific committee on unconventional oil and gas development
Period: August, 2014-August, 2015
Amount: $10,500 and related expenses
Role: Participant, document writer, concerning regional and national research needs

Source: Claude Worthington Benedum Foundation
Title: Project Hope
Period: 1/1/2014-12/31/2014
Amount: $150,000 for entire grant, $50,000 for specific project
Role: Author and project leader for the Quality Clinical Health Care Analytics aim (Suresh Madhavan, PI for entire grant).

Source: Claude Worthington Benedum Foundation
Title: WVU School of Public Health Project (20110033 – 2W537)
Period: 4/1/11-9/30/12
Amount: $185,000
Role: Principal Investigator

Source: Brookmar, Inc.
Title: C8 Health Project Supplement
Period: 7/1/08-8/31/08
Amount: $8,000
Role: Principal Investigator

Source: Brookmar, Inc.
Title: Data Hosting for the C8 Health Project
Period: 7/1/06-6/30/08
Amount: $315,044
Role: Principal Investigator

Source: Brookmar, Inc.
Title: Data Hosting for the C8 Health Project
Period: 6/1/06-6/30/08
Amount: $54,463
Role: Principal Investigator

Source: Brookmar, Inc.
Title: Quality Assurance for the C8 Health Project
Period: 7/1/06-6/30/08
Amount: $37,397
Role: Principal Investigator

Source: BrickStreet Mutual Insurance Company
Title: WVU Data Analysis Project
Period: 1/1/08-12/31/08
Amount: $448,668
Role: Principal Investigator

Source: BrickStreet Mutual Insurance Company
Title: BrickStreet Mutual-WVU Data Analysis Project

Period: 1/1/07-12/31/07
Amount: $417,385
Role: Principal Investigator, 8% support

Source: Brookmar, Inc.
Title: C8 Health Projects (several)
Period: 7/25/06-8/31/08
Amount: $373,510
Role: Principal Investigator (effort varies by subproposal)

Source: Brookmar, Inc.
Title: Hourly Consulting for C8 Health Project
Period: 7/1/05-present
Amount: service contracted to UHA
Role: Consultant

Source: Brookmar, Inc.
Title: Data Hosting for C8 Health Project
Period: 7/1/06-6/30/08
Amount: $365,510
Role: Principal Investigator

Source: MIT Licensure Agreement with COSTAR
Title: Mixed Waste Disposal OSP #74329
Period: 1989-91
Role: Laboratory Director

University

Source: West Virginia University
Title: Summer Research Project for M1 Student: On Line Interactive Resources for Epidemiology
Period: Summer, 1997
Amount: $1,000
Role: Principal Investigator

Source: Medical University of South Carolina
Title: Environmental Consultant to Major DOE grantee
Period: 1994-96
Amount: $10,000/year
Role: Consultant

Source: Office of the Dean of Graduate Studies
Title: Summer Research Project for M1 Student: State Policy for Controversial Compensable Diagnosis
Period: Summer, 1996
Amount: $2,000
Role: Principal Investigator

PROFESSIONAL AFFILIATIONS

Current Professional and Scientific Organizations and Societies

- **Fellow**, American College of Occupational Medicine
- **Fellow**, American College of Physicians
- American Teachers of Preventive Medicine

Offices in Professional and Accreditation Organizations

2012-2014	Member, West Virginia State Public Health Assessment Advisory Group
1999-2004	Chair, Residency Review Committee, Preventive Medicine. Accreditation Council on Graduate Medical Education
1999-2001	Steering Committee, SE Public Health Leadership Institute (NC, SC, TN, VA & WV)
1988-92	Council on Scientific Affairs, American College of Occupational Medicine
1988-93	Chair, Occupational & Clinical Toxicology Committee, American College of Occupational Medicine
1993-2002	Trustee, American Board of Preventive Medicine
1986-2003	Occupational Medicine Practice Committee, American College of Occupational Medicine

National/International Committees of Professional Organizations or Foundations

- International Agency for Research on Cancer (IARC). IARC Monographs Working Group for Volume 115 – "Some Industrial Chemicals." Lyon, France. March, 2016
- Health Effects Institute. Unconventional Special Committee on unconventional oil and gas development. 2014-2015
- American College of Occupational and Environmental Medicine. Environmental Medicine Committee. 1992-2002
- American National Standards Institute (ANSI). Medical Surveillance Subcommittee Z136, Safe use of lasers. 1989-1992.
- American College of Occupational and Environmental Medicine, Practice Committee, 1985-94
- Office of Science and Technology Policy. Study on Risk Assessment, 1985-1986.

HONORS AND AWARDS

- First author publication cited among "Compilation of Best Papers, 1979-1991." J Occup Environ Med 2016: 58(2); 111-13
- Appointed, Best Doctors in America, November, 2015
- Inducted as faculty to WVU chapter of Delta Omega, the national honor society in public health, May, 2014
- Appointed to the Governor's Advisory Council on Substance Abuse, August 2011.
- Appointed Guest Researcher, National Institute of Occupational Safety and Health (NIOSH), September 2010.
- NCEH/ATSDR (National Center for Environmental Health and Agency for Toxic Substances and Disease Registry, CDC) Director's Award for Outstanding Service, October 2008.
- The Department of Community Medicine was selected as the "Health Care Heroes" for the state of West Virginia, August 2008.
- Invited attendee, NIOSH Digital Imaging Workshop, March 11-13, 2008, Rockville, MD.
- Appointed Chair, Board of Scientific Counselors, National Center for Environmental Health/Agency for Toxic Substances and Disease Registry, 2007.
- Selected as one of the Best Doctors in America, by Best Doctors, Inc., Aiken, SC (2007-2010).
- Nominated to the US Task Force on Community Prevention Services, CDC, 2006.
- Appointed by the US Secretary for Health and Human Services to the Board of Scientific Counselors, National Center for Environmental Health/Agency for Toxic Substances and Disease Registry, 2006.
- Appointed Clinical Professor, West Virginia School of Osteopathic Medicine, 2004.
- Department of Community Medicine: Dean's Award for Excellence in Research, 2002.
- Certificate of Appreciation for Service to the West Virginia Public Health Association, 2000.
- On behalf of Department of Community Medicine, State Health Education Award for Outstanding Organizational Leadership to SHEC and Health Promotion in West Virginia, 1999.

- Certificate of Appreciation, Service to the Executive Council, West Virginia Public Health Association, 1999.
- Robert A. Kehoe Award of Merit, American College of Occupational and Environmental Medicine, 1998.
- Harriet Hardy Award for the physician who exemplifies the highest ideals of occupational and environmental medicine. New England College of Occupational and Environmental Medicine, 1997.
- Adolph H. Kammer Merit in Authorship Award, American College of Occupational and Environmental Medicine, 1994.
- Top Ten Percent Award, Teachers of Introduction to Clinical Medicine, West Virginia University, 1994.
- Robert J. Hilker Lectureship Award, American College of Occupational and Environmental Medicine, 1993.
- Navy Achievement Medal, 1984
- Navy Letters of Commendation (several)
- Finalist, Leo Friend Award for Best Professional Paper, 1988
- Fellow, American College of Occupational Medicine
- Fellow, American College of Physicians

Postgraduate Presentations and Teaching

American College of Nutrition (Podium Presentation): Personal poisons: the role of nutrition. San Diego, CA. November 10, 2016

Inter-professional Education Speaker Series: Across professions and institutions, what does it take to improve care? August 26, 2016, at West Virginia University

WV Data for Improving Clinical Orders. Panel address to WV Choosing Wisely Quality Improvement meeting. Charleston, WV. Sponsored by CAMC Institute and West Virginians for Affordable Health Care, May 6, 2015

Toxicologic Challenges: Population and Occupational Health Risks. Keynote address to the 28th Annual meeting of the Allegheny-Erie Society of Toxicology Regional Chapter. May16, 2014

West Virginia's Public Health: What Can We Achieve? Keynote address to the West Virginia Public Health Association Annual Conference, September 19, 2012.

Coal Slurry Waste Underground Injection Study. Presented to the Joint Committee on Water Resources of the WV Legislature, August 9 and 10, 2010 (two presentations).

Air Pollution and Climate Change. Presented to PUBH 605: Introduction to International Public Health, June 16, 2010.

Environmental Issues in West Virginia. Presented to the Occupational Medicine Grand Rounds, December 1, 2009.

Secondhand Smoke, Primary Prevention. Presented to the Department of Medicine Grand Rounds, October 20, 2009.

Environmental Questions and Community Concerns: The Role of Public Health Research. Presented to PUBH 706: Current Research Issues, August 27, 2009.

Air Pollution and Climate Change. Presented to PUBH 605: Introduction to International Public Health, June 10, 2009.

Environmental Issues in West Virginia. Presented to the Occupational Medicine Grand Rounds, May 12, 2009.

From the Mountains to the Valleys: Recent Environmental Issues in West Virginia. Presented to the Department of Medicine Grand Rounds, February 20, 2009.

Low Back Pain. Presented to the Occupational Medicine Grand Rounds, November 11, 2008.

Environmental Health Issues in West Virginia. Presented to the Annual Conference of the West Virginia Public Health Association, September 17, 2008.

Lead and Health. Presented to the Occupational Medicine Grand Rounds, August 26, 2008.

Air Pollution and Climate Change. Presented to PUBH 605: Introduction to International Public Health, June 11, 2008.

Pandemic Influenza. Presented to CCMD 712: Epidemiology and Biostatistics (for medical students), November 1, 2007.

Air Quality. (Television presentation, seen in Clarksburg/Morgantown – WBOY, Huntington/Charleston – WOWK, Wheeling/Steubenville – WTRF, Beckley/Bluefield/Lewisburg – WVNS), June 11, 2007.

Asbestos in Buildings and Health Effects. Public Health Grand Rounds. November 30, 2006. Simulcast, web-archived, and used for training at WVU. Used by permission at other universities.

Influenza: Preparing to Prevent a Pandemic Disaster – Pandemic and Other Public Health Concerns. The Tuberculosis Association of Ohio County (WV), November 14, 2006.

Toxic Industrial Symposium (ATSDR and WV Poison Center, Charleston, WV). Toxic Industrial Chemicals. September 11, 2006.

State Health Education Council of West Virginia. Trails to a Healthy West Virginia: Pandemic Flu and Mass Migration. May 3, 2006.

Southeast Public Health Leadership Center. Disease Clusters, Causation, and Common Sense. Teleconference, February 16, 2005.

Wheeling-Charleston Diocese, Appalachian Institute. Health: A Comprehensive Checkup for Rural West Virginia. Being Well in Rural West Virginia Conference. Bishop Hodges Pastoral Center, Huttonsville, WV. April 22, 2005.

US National Conservation Training Center. Emerging Contaminants and Water Supply Workshop. Environmental questions and Community Concerns: The Role of Public Health Research. September 19, 2005.

Biology Department Invited Seminar. Hardy County Research Findings and Plans. October 17, 2005.

Parkersburg Academy of Medicine. Pandemics. November 8, 2005.

Public Health Grand Rounds. Influenza: Preparing to Prevent a Pandemic Disaster. December 8, 2005.

Hardy County (West Virginia) Health Care Professionals. Cancer and Other Health Outcomes in Hardy County. Moorefield, WV. November 15, 2004. (Grant funded, 30 attendees).

West Virginia Public Health Association. Epidemiology of Disease Clusters. Huntington, WV. September 23, 2004.

American Association of Legal Nurse Consultants Fifteenth National Educational Conference. Disease clusters, causation, and common sense. Chicago, IL, April 1, 2004.

Respiratory Risk Factors in a Rural State. West Virginia Lung Association, Morgantown, WV. March 27, 2004.

Media Science Forum: Making Prevention Research News. Research America! And the West Virginia Prevention Research Center (panelist).

Molds. Pediatrics Grand Rounds. December 17, 2003.

Gatekeepers' Response to a Bioterrorism Attack. Eighth Annual Mountain Retreat, Snowshoe, WV. September 18, 2004.

Healthy West Virginia Summit 2003. Preventing chronic illness: closing the gap between research and prevention. August 4, 2003, Stonewall Resort, Lewis County, WV.

West Virginia Bar Association. Understanding disease clusters and causation in environmental medicine. Greenbrier Hotel, White Sulphur Springs, WV, July 12, 2003.

WAJR, Morgantown, WV. ("Talk Radio"). Mold. April 3, 2003.

National Institute of Occupational Safety and Health. Best Practices in Workplace Surveillance Conference. Identification and tracking of workplace injury. Illness, exposure, and hazards. A system for rapid analysis of transactional insurance data to identify trends in costs of work-related injuries. Cincinnati, OH, November 2001.

American Occupational Health Conference on behalf of ACOEM Millennium Series: Occupational Disease. San Francisco, CA, April 2001.

Massachusetts Medical Society. Environmental Issues in Clinical Practice. Cluster Analysis in Environmental Medicine. Boston, MA. Earth Day, April 22, 2001.

Governor's Occupational Safety and Health Conference (PA). "What's new in workers' health?" Hershey, PA, October 29, 2001

Fifth Annual Cost-Effectiveness Evaluation and Management of Low Back Pain Conference. The epidemiology of low back injuries. Morgantown, WV, November 5, 1999.

75th West Virginia Public Health Association Meeting. Health Effects of Air Pollution, Canaan Valley, WV, September 23, 1999

Sentinel Events in the Clinic. **Cleveland Clinic Foundation**, Cleveland, OH, June 4, 1998.

Lead Poisoning, Issues and Treatment. **Northern Panhandle Childhood Lead Poisoning Prevention Project**, Wheeling, WV, May 14, 1998.

Occupational Asthma: in and out of the workplace. **NIOSH-West Virginia University Conf**. Session Co-Chair Overview and Clinical Session, Morgantown, WV, April 30, 1998.

Core Curriculum in Environmental Medicine. **American College of Occupational and Environmental Medicine**, Nashville, TN, October 30-31, 1998.

Coping in the Trenches. **New England College of Occupational and Environmental Medicine**, Boston, MA. December 5, 1997.

Inhalation and Toxicity Injuries. **West Virginia University School of Medicine**. Emergency Medicine Grand Rounds, October 2, 1997.

Multiple Chemical Sensitivity. **AASCIF Claims/Rehab. Seminar**, Charleston, WV, September 18, 1997.

Occupational and Environmental Cluster Management. **American College of Occupational and Environmental Medicine.** Orlando, FL, May 13, 1997.

Occupational Asthma. **Tri-State Medical Association**. Lakeview, WV, September 27, 1996.

Laser eye injuries in academic research settings. **NIOSH Division of Safety Research**. Morgantown, WV, August 15, 1996.

Pesticides: Health-related issues. **Assoc. Southern Feed, Fertilizer, and Pesticide Control Officials.** Lakeview Conference Center, Morgantown, WV, June 18, 1996.

Low-dose risks, reproductive hazards, and risk assessment. **Medical University of South Carolina, Department of Family Medicine.** Spoleto Festival. Charleston, SC, May 25, 1996.

Epidemiology and cluster assessment. **American College of Occupational and Environmental Medicine.** Core Curriculum in Environmental Medicine. Alexis Park Resort, Las Vegas, May 6-7, 1995 and San Antonio, TX, April 27-28, 1996.

"Twitchy airways in the 21st century." **Industrial Health Foundation Conference**. Occupational Health Issues of the Next Decade. Orlando, FL, March 28, 1996.

The wherefore of risk assessment and discussion. **Medical University of South Carolina Environmental Hazards Assessment Program**. Charleston, SC, October 26, 1995.

Risk in the practice of medicine and risk assessment as it extends to the community. **Medical University of South Carolina Environmental Hazards Assessment Program**. Charleston, SC, October 26, 1995.

Air Pollution (outdoor). **American College of Occupational and Environmental Medicine**. Environmental exposures and susceptibility: a clinical and policy focus. Las Vegas, May 4, 1995.

Three mini-epidemics: goodwill and regulation. **US Dept of Labor**, Occupational Safety and Health Administration, Washington, DC, April 24, 1995.

Public Health in the Clinic: Three West Virginia Mini-epidemics. Internal Medicine Grand Rounds. **West Virginia University**, Morgantown, WV, March 31, 1995.

Disease clusters & causation. **Michigan Occupational and Environmental Medicine Association**. Lansing, MI, June 3, 1994.

Keynote address: Health care reform, you, and me. Mixed chemical exposures. **Midwest Center for Occupational Health and Safety**. Minneapolis, MN, March 15-16, 1994.

Occupational physician in environmental health. **Southern Medical Association**. 87th Annual Scientific Assembly, New Orleans, October 19, 1993.

Introduction to environmental medicine (ATSDR-sponsored course). **American College of Occupational/Environmental Medicine**. State of the Art Conference. Dallas, TX, October 27, 1993.

Between "B"-ing and nothingness (The ILO system). **CDC-NIOSH,** invited speaker. Morgantown, WV, July 14, 1993.

Occupational Health and Environmental Medicine: comparisons, not contrasts. **CSOMA Robert J. Hilker, MD, Award Lecture.** Chicago, March 19, 1993.

Occupational Epidemiology. **Thirty-fourth Navy Occupational Health and Preventive Medicine Workshop**. Norfolk, VA, February 27, 1993.

Occupational health and the primary care physician. **Philadelphia County Medical Society.** October 19, 1992.

Environmental Medicine: What it is and isn't. **American Occupational Health Conference.** Washington, DC, May 6, 1992.

Workplace cancer clusters: causation and the limits of technical common sense. **Semiconductor Safety Association,** 14th Annual Meeting, Phoenix, AZ. April 6, 1992.

Disease clusters: environmental causation and common sense. **MIT-Lincoln Laboratory Distinguished Lecture Series.** Lexington, MA, March 18, 1992.

Grand Rounds. **Baystate Medical Center,** Springfield, MA, March 11, 1992.

Keynote Address: Occupational Environmental Medicine: Comparisons and Contrasts. **American College of Occupational Medicine State of the Art Conference.** St. Louis, MO, October 30, 1991.

Introduction. Conference on Laboratory Waste Management. **Massachusetts Institute of Technology**, Cambridge, MA, October 24, 1991.

Solvents in the workplace. Hazard Control in Semiconductor Manufacturing. **Semiconductor Industry Association.** Westborough, MA, October 17, 1991.

Biotechnology Industry Issues: Genetic Engineering and Worker Health. **American College of Occupational Medicine.** San Francisco, CA. May 2, 1991.

Epidemiology of Toxic Clusters. Neurology in the 1990's, **Harvard Medical School.** Boston, MA, March 23, 1991.

OSHA Laboratory Standard: Regulation of Toxic Substances in Laboratories and Waste Management in Laboratories. U.S. Dept of Commerce, **National Institute of Standards and Technology.** Gaithersburg, MD, Sept. 26, 1990.

Variability in interpretation of radiographs of x-rays for asbestos abnormalities: problems and solutions. **Collegium Ramazzini.** The Third Wave of Asbestos Disease. New York. June 7, 1990.

Workplace Medical Surveillance: Goals, Principles, and Breaking the Rules. **American Chemical Society,** Division of Chemical Health and Safety. Boston, MA, April 24, 1990.

Occupational Health Aspects of Biotechnology. **Society for Occupational and Environmental Health**. Washington, DC, April 24, 1990.

Approaching a Cancer Cluster. Thirty-Second Environmental Health Center Conference. **United States Navy,** Virginia Beach, VA. March 23, 1990.

Cancer Clusters. The Charles A. Dana Seminar Series in Environmental Epidemiology. New York, **Mt. Sinai Medical School**, February 16, 1990.

Conference on Laboratory Waste Management (conference organizer, supported by EPA #R-815734-01.) **Massachusetts Institute of Technology,** Cambridge, MA, January 31, 1990.

Protecting research laboratory workers. **American College of Occupational Medicine Conference**. Boston, MA, May 5, 1989.

Postgraduate seminar: Medical Surveillance Programs. **American College of Occupational Medicine** Conference. Boston, MA, May 1, 1989.

Biotechnology and Occupational Health. **American Public Health Association.** Annual Meeting, Boston, MA, November 14, 1988.

Eighth International Pneumoconiosis Conference. Pittsburgh, PA, August 23-26, 1988.

1. "B-Readers" and asbestos medical surveillance
2. Smoking and radiologic opacities in U.S. Navy asbestos workers
3. Asbestos medical surveillance population: predominant left-sided location of unilateral plaques

Asbestos medical surveillance: clinical and radiographic basis. **American Occupational Medical Association Conference**. New Orleans, LA, April 29, 1988.

Clusters, environmental causation, and common sense. **American Occupational Medical Association Conference.** New Orleans, LA, April 27, 1988.

Grand Rounds: Disease Clusters. **Mount Auburn Hospital**. Cambridge, MA, July 14, 1988.

Government regulation and occupational exposures of biotechnology researchers and production staff. Biotechnology, Regulation, and Human Health Symposium. **Massachusetts Institute of Technology,** August 7, 1987.

Risks from lithium batteries. The New Technologies Health and Safety Institute. **Worcester Polytechnic Institute.** Worcester, MA, May 28, 1987.

Occupational Health Issues in Biotechnology. **American Occupational Medical Association Conference.** Philadelphia, PA, April 1987.

An occupational physician looks at low back pain. Environmental Health Center Annual conference. **United States Navy.** Virginia Beach, VA, April 1984.

Potential health hazards of lithium manganese oxide and lithium carbon monofluoride batteries. **Power Sources Symposium**. Cherry Hill, NJ, June 1984.

Recognition of disease caused by chemical exposure: taking the history. Risk Management of Toxic Substances: Recognition, Prevention, Potential Liability. The **Hampton Institute** Center for Marine and Coastal Studies. Hampton, VA, July 1984.

Potential health hazards of lithium thionyl chloride batteries. **Lithium Battery Tri-Service Working Group.** San Diego, CA, February 1984.

Worker fitness and health responsibilities. **American Public Works Association.** Minneapolis, MN, May 1983.

Neurotoxicity of industrial solvents. Current Concepts for Cardiopulmonary and Occupational Medicine, **Midwest Center for Occupational Health,** St. Paul, MN, March 1983.

PCB's, PBB's, Dibenzodioxins, and resources for assistance. Medical and Legal Management of Workplace Health Concerns. **Midwest Center for Occupational Health.** Minneapolis, MN, November 1982.

OTHER ACTIVITIES

Community Activities:

- Southwest Pennsylvania Environmental Health Project (www.environmentalhealthproject.org). Scientific Advisory Board Member, 2016-2019 (3-year term)
- United Way Volunteer Leader, WVU School of Medicine Faculty, 2004
- Troop 62 Committee, Boy Scouts of America, Morgantown, WV, 1996-97
- Emergency Planning Boards, Cities of Cambridge and Lexington, MA, 1989-1992
- Environmental Hazards of Fires (lecture series) City of Cambridge, MA, Fire Department, 1990, 1992
- Health Right Free Clinic, Morgantown, WV Environmental Consultant, 1992-1994
- Numerous lectures to community groups, religious organizations, senior citizen groups, rotary clubs, PTAs, boards of education, etc., concerning environmental health and safety.
- Community Health Advocacy and Transformation Team. Monongalia County Health Department, 1997-98.

REPORT OF ALAN DUCATMAN, M.D.
In the case of Sullivan, et. al. v. Saint-Gobain Performance Plastics Company, No. 5:16-cv-000125-GWC (D. Vt.)

Exhibit 2: Supporting References

Allen PB, Gower-Rousseau C, Danese S, Peyrin-Biroulet L. 2017. Preventing disability in inflammatory bowel disease. Therap Adv Gastroenterol 10: 865-876.

Apelberg BJ, Witter FR, Herbstman JB, Calafat AM, Halden RU, Needham LL, Goldman LR. 2007. Cord serum concentrations of perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) in relation to weight and size at birth. Environ Health Perspect 115: 1670-1676.

Avanasi R, Shin HM, Vieira VM, Bartell SM. 2016. Impacts of geocoding uncertainty on reconstructed PFOA exposures and their epidemiological association with preeclampsia. Environ Res 151: 505-512.

Avanasi R, Shin HM, Vieira VM, Bartell SM. 2016. Variability and epistemic uncertainty in water ingestion rates and pharmacokinetic parameters, and impact on the association between perfluorooctanoate and preeclampsia in the C8 Health Project population. Environ Res 146: 299-307.

Avanasi R, Shin HM, Vieira VM, Savitz DA, Bartell SM. 2016. Impact of Exposure Uncertainty on the Association between Perfluorooctanoate and Preeclampsia in the C8 Health Project Population. Environ Health Perspect 124: 126-132.

Bach CC, Bech BH, Brix N, Nohr EA, Bonde JP, Henriksen TB. 2015. Perfluoroalkyl and polyfluoroalkyl substances and human fetal growth: a systematic review. Crit Rev Toxicol 45: 53-67.

Bach CC, Bech BH, Nohr EA, Olsen J, Matthiesen NB, Bonefeld-Jorgensen EC, Bossi R, Henriksen TB. 2016. Perfluoroalkyl Acids in Maternal Serum and Indices of Fetal Growth: The Aarhus Birth Cohort. Environ Health Perspect 124: 848-854.

Banerji JS, Wolff EM, Massman JD, 3rd, Odem-Davis K, Porter CR, Corman JM. 2016. Prostate Needle Biopsy Outcomes in the Era of the U.S. Preventive Services Task Force Recommendation against Prostate Specific Antigen Based Screening. J Urol 195: 66-73.

Barry V, Winquist A, Steenland K. 2013. Perfluorooctanoic acid (PFOA) exposures and incident cancers among adults living near a chemical plant. Environ Health Perspect 121: 1313-1318.

Bibbins-Domingo K, Grossman DC, Curry SJ, Davidson KW, Epling JW, Jr., Garcia FA, Kemper AR, Krist AH, Kurth AE, Landefeld CS, et al. 2016. Primary Care Interventions to Support Breastfeeding: US Preventive Services Task Force Recommendation Statement. Jama 316: 1688-1693.

Bijland S, Rensen PC, Pieterman EJ, Maas AC, van der Hoorn JW, van Erk MJ, Havekes LM, Willems van Dijk K, Chang SC, Ehresman DJ, et al. 2011. Perfluoroalkyl sulfonates cause alkyl

chain length-dependent hepatic steatosis and hypolipidemia mainly by impairing lipoprotein production in APOE*3-Leiden CETP mice. Toxicol Sci 123: 290-303.

Bjerregaard-Olesen C, Ghisari M, Bonefeld-Jorgensen EC. 2016. Activation of the estrogen receptor by human serum extracts containing mixtures of perfluorinated alkyl acids from pregnant women. Environ Res 151: 71-79.

Bjork JA, Butenhoff JL, Wallace KB. 2011. Multiplicity of nuclear receptor activation by PFOA and PFOS in primary human and rodent hepatocytes. Toxicology 288: 8-17.

Bost PC, Strynar MJ, Reiner JL, Zweigenbaum JA, Secoura PL, Lindstrom AB, Dye JA. 2016. U.S. domestic cats as sentinels for perfluoroalkyl substances: Possible linkages with housing, obesity, and disease. Environ Res 151: 145-153.

Botelho SC, Saghafian M, Pavlova S, Hassan M, DePierre JW, Abedi-Valugerdi M. 2015. Complement activation is involved in the hepatic injury caused by high-dose exposure of mice to perfluorooctanoic acid. Chemosphere 129: 225-231.

Braun JM, Chen A, Romano ME, Calafat AM, Webster GM, Yolton K, Lanphear BP. 2016. Prenatal perfluoroalkyl substance exposure and child adiposity at 8 years of age: The HOME study. Obesity (Silver Spring) 24: 231-237.

Buhrke T, Kruger E, Pevny S, Rossler M, Bitter K, Lampen A. 2015. Perfluorooctanoic acid (PFOA) affects distinct molecular signalling pathways in human primary hepatocytes. Toxicology 333: 53-62.

Buser MC, Scinicariello F. 2016. Perfluoroalkyl substances and food allergies in adolescents. Environ Int 88: 74-79.

Campbell S, Raza M, Pollack AZ. 2016. Perfluoroalkyl substances and endometriosis in US women in NHANES 2003-2006. Reprod Toxicol 65: 230-235.

Cardenas A, Gold DR, Hauser R, Kleinman KP, Hivert MF, Calafat AM, Ye X, Webster TF, Horton ES, Oken E. 2017. Plasma Concentrations of Per- and Polyfluoroalkyl Substances at Baseline and Associations with Glycemic Indicators and Diabetes Incidence among High-Risk Adults in the Diabetes Prevention Program Trial. Environ Health Perspect 125: 107001.

Cardoso AS, Gonzaga NC, Medeiros CC, Carvalho DF. 2013. Association of uric acid levels with components of metabolic syndrome and non-alcoholic fatty liver disease in overweight or obese children and adolescents. J Pediatr (Rio J) 89: 412-418.

Carter HB, Albertsen PC, Barry MJ, Etzioni R, Freedland SJ, Greene KL, Holmberg L, Kantoff P, Konety BR, Murad MH, et al. 2013. Early detection of prostate cancer: AUA Guideline. J Urol 190: 419-426.

Chalasani N, Younossi Z, Lavine JE, Diehl AM, Brunt EM, Cusi K, Charlton M, Sanyal AJ. 2012. The diagnosis and management of non-alcoholic fatty liver disease: practice guideline by the American Gastroenterological Association, American Association for the Study of Liver Diseases, and American College of Gastroenterology. Gastroenterology 142: 1592-1609.

Chang ET, Adami HO, Boffetta P, Cole P, Starr TB, Mandel JS. 2014. A critical review of perfluorooctanoate and perfluorooctanesulfonate exposure and cancer risk in humans. Crit Rev Toxicol 44 Suppl 1: 1-81.

Chen F, Yin S, Kelly BC, Liu W. 2017. Isomer-Specific Transplacental Transfer of Perfluoroalkyl Acids: Results from a Survey of Paired Maternal, Cord Sera, and Placentas. Environ Sci Technol 51: 5756-5763.

Chen MH, Ha EH, Wen TW, Su YN, Lien GW, Chen CY, Chen PC, Hsieh WS. 2012. Perfluorinated compounds in umbilical cord blood and adverse birth outcomes. PLoS One 7: e42474.

Choi EM, Suh KS, Rhee SY, Oh S, Woo JT, Kim SW, Kim YS, Pak YK, Chon S. 2017. Perfluorooctanoic acid induces mitochondrial dysfunction in MC3T3-E1 osteoblast cells. J Environ Sci Health A Tox Hazard Subst Environ Eng 52: 281-289.

Chou R, Dana T, Blazina I, Daeges M, Bougatsos C, Jeanne T. 2016. U.S. Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence Reviews. Screening for Dyslipidemia in Younger Adults: A Systematic Review to Update the 2008 US Preventive Services Task Force Recommendation Rockville (MD): Agency for Healthcare Research and Quality (US).

Coperchini F, Awwad O, Rotondi M, Santini F, Imbriani M, Chiovato L. 2017. Thyroid disruption by perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA). J Endocrinol Invest 40: 105-121.

Corsini E, Sangiovanni E, Avogadro A, Galbiati V, Viviani B, Marinovich M, Galli CL, Dell'Agli M, Germolec DR. 2012. In vitro characterization of the immunotoxic potential of several perfluorinated compounds (PFCs). Toxicol Appl Pharmacol 258: 248-255.

Cosman F, de Beur SJ, LeBoff MS, Lewiecki EM, Tanner B, Randall S, Lindsay R. 2014. Clinician's Guide to Prevention and Treatment of Osteoporosis. Osteoporos Int 25: 2359-2381.

Cui R, Zhang H, Guo X, Cui Q, Wang J, Dai J. 2015. Proteomic analysis of cell proliferation in a human hepatic cell line (HL-7702) induced by perfluorooctane sulfonate using iTRAQ. J Hazard Mater 299: 361-370.

Dalal S, Bhesania S, Silber S, Mehta P. 2017. Use of Electronic Clinical Decision Support and Hard Stops to Decrease Unnecessary Thyroid Function Testing. BMJ Qual Improv Rep 6.

Dalsager L, Christensen N, Husby S, Kyhl H, Nielsen F, Host A, Grandjean P, Jensen TK. 2016. Association between prenatal exposure to perfluorinated compounds and symptoms of infections at age 1-4years among 359 children in the Odense Child Cohort. Environ Int 96: 58-64.

Danese S, Fiocchi C. 2011. Ulcerative colitis. N Engl J Med 365: 1713-1725.

Dankers AC, Roelofs MJ, Piersma AH, Sweep FC, Russel FG, van den Berg M, van Duursen MB, Masereeuw R. 2013. Endocrine disruptors differentially target ATP-binding cassette transporters

in the blood-testis barrier and affect Leydig cell testosterone secretion in vitro. Toxicol Sci 136: 382-391.

Darrow LA, Groth AC, Winquist A, Shin HM, Bartell SM, Steenland K. 2016. Modeled Perfluorooctanoic Acid (PFOA) Exposure and Liver Function in a Mid-Ohio Valley Community. Environ Health Perspect 124: 1227-1233.

Darrow LA, Stein CR, Steenland K. 2013. Serum perfluorooctanoic acid and perfluorooctane sulfonate concentrations in relation to birth outcomes in the Mid-Ohio Valley, 2005-2010. Environ Health Perspect 121: 1207-1213.

Das KP, Wood CR, Lin MT, Starkov AA, Lau C, Wallace KB, Corton JC, Abbott BD. 2017. Perfluoroalkyl acids-induced liver steatosis: Effects on genes controlling lipid homeostasis. Toxicology 378: 37-52.

de Cock M, De Boer MR, Lamoree M, Legler J, Van De Bor M. 2014. Prenatal exposure to endocrine disrupting chemicals and birth weight-A prospective cohort study. J Environ Sci Health A Tox Hazard Subst Environ Eng 51: 178-185.

DeWitt JC, Peden-Adams MM, Keller JM, Germolec DR. 2012. Immunotoxicity of perfluorinated compounds: recent developments. Toxicol Pathol 40: 300-311.

DeWitt JC, Shnyra A, Badr MZ, Loveless SE, Hoban D, Frame SR, Cunard R, Anderson SE, Meade BJ, Peden-Adams MM, et al. 2009. Immunotoxicity of perfluorooctanoic acid and perfluorooctane sulfonate and the role of peroxisome proliferator-activated receptor alpha. Crit Rev Toxicol 39: 76-94.

DeWitt JC, Williams WC, Creech NJ, Luebke RW. 2016. Suppression of antigen-specific antibody responses in mice exposed to perfluorooctanoic acid: Role of PPARalpha and T- and B-cell targeting. J Immunotoxicol 13: 38-45.

Domazet SL, Grontved A, Timmermann AG, Nielsen F, Jensen TK. 2016. Longitudinal Associations of Exposure to Perfluoroalkylated Substances in Childhood and Adolescence and Indicators of Adiposity and Glucose Metabolism 6 and 12 Years Later: The European Youth Heart Study. Diabetes Care 39: 1745-1751.

Dong GH, Tung KY, Tsai CH, Liu MM, Wang D, Liu W, Jin YH, Hsieh WS, Lee YL, Chen PC. 2013. Serum polyfluoroalkyl concentrations, asthma outcomes, and immunological markers in a case-control study of Taiwanese children. Environ Health Perspect 121: 507-513, 513e501-508.

Ducatman A, Zhang J, Fan H. 2015. Prostate-specific antigen and perfluoroalkyl acids in the C8 health study population. J Occup Environ Med 57: 111-114.

Elcombe CR, Elcombe BM, Foster JR, Chang SC, Ehresman DJ, Butenhoff JL. 2012. Hepatocellular hypertrophy and cell proliferation in Sprague-Dawley rats from dietary exposure to potassium perfluorooctanesulfonate results from increased expression of xenosensor nuclear receptors PPARalpha and CAR/PXR. Toxicology 293: 16-29.

Eriksen KT, Raaschou-Nielsen O, McLaughlin JK, Lipworth L, Tjonneland A, Overvad K, Sorensen M. 2013. Association between plasma PFOA and PFOS levels and total cholesterol in a middle-aged Danish population. PLoS One 8: e56969.

Fair PA, Romano T, Schaefer AM, Reif JS, Bossart GD, Houde M, Muir D, Adams J, Rice C, Hulsey TC, et al. 2013. Associations between perfluoroalkyl compounds and immune and clinical chemistry parameters in highly exposed bottlenose dolphins (Tursiops truncatus). Environ Toxicol Chem 32: 736-746.

Fairley KJ, Purdy R, Kearns S, Anderson SE, Meade B. 2007. Exposure to the immunosuppressant, perfluorooctanoic acid, enhances the murine IgE and airway hyperreactivity response to ovalbumin. Toxicol Sci 97: 375-383.

Fei C, McLaughlin JK, Tarone RE, Olsen J. 2007. Perfluorinated chemicals and fetal growth: a study within the Danish National Birth Cohort. Environ Health Perspect 115: 1677-1682.

Fernandez Freire P, Perez Martin JM, Herrero O, Peropadre A, de la Pena E, Hazen MJ. 2008. In vitro assessment of the cytotoxic and mutagenic potential of perfluorooctanoic acid. Toxicol In Vitro 22: 1228-1233.

Fisher M, Arbuckle TE, Wade M, Haines DA. 2013. Do perfluoroalkyl substances affect metabolic function and plasma lipids?--Analysis of the 2007-2009, Canadian Health Measures Survey (CHMS) Cycle 1. Environ Res 121: 95-103.

Fitz-Simon N, Fletcher T, Luster MI, Steenland K, Calafat AM, Kato K, Armstrong B. 2013. Reductions in serum lipids with a 4-year decline in serum perfluorooctanoic acid and perfluorooctanesulfonic acid. Epidemiology 24: 569-576.

Fleisch AF, Rifas-Shiman SL, Mora AM, Calafat AM, Ye X, Luttmann-Gibson H, Gillman MW, Oken E, Sagiv SK. 2017. Early-Life Exposure to Perfluoroalkyl Substances and Childhood Metabolic Function. Environ Health Perspect 125: 481-487.

Fletcher T, Galloway TS, Melzer D, Holcroft P, Cipelli R, Pilling LC, Mondal D, Luster M, Harries LW. 2013. Associations between PFOA, PFOS and changes in the expression of genes involved in cholesterol metabolism in humans. Environ Int 57-58: 2-10.

Frisbee SJ, Shankar A, Knox SS, Steenland K, Savitz DA, Fletcher T, Ducatman AM. 2010. Perfluorooctanoic acid, perfluorooctanesulfonate, and serum lipids in children and adolescents: results from the C8 Health Project. Arch Pediatr Adolesc Med 164: 860-869.

Fu Y, Wang T, Fu Q, Wang P, Lu Y. 2014. Associations between serum concentrations of perfluoroalkyl acids and serum lipid levels in a Chinese population. Ecotoxicol Environ Saf 106: 246-252.

Gallo V, Leonardi G, Genser B, Lopez-Espinosa MJ, Frisbee SJ, Karlsson L, Ducatman AM, Fletcher T. 2012. Serum perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS) concentrations and liver function biomarkers in a population with elevated PFOA exposure. Environ Health Perspect 120: 655-660.

Galloway TS, Fletcher T, Thomas OJ, Lee BP, Pilling LC, Harries LW. 2015. PFOA and PFOS are associated with reduced expression of the parathyroid hormone 2 receptor (PTH2R) gene in women. Chemosphere 120: 555-562.

Garber JR, Cobin RH, Gharib H, Hennessey JV, Klein I, Mechanick JI, Pessah-Pollack R, Singer PA, Woeber KA. 2012. Clinical practice guidelines for hypothyroidism in adults: cosponsored by the American Association of Clinical Endocrinologists and the American Thyroid Association. Thyroid 22: 1200-1235.

Geiger SD, Xiao J, Ducatman A, Frisbee S, Innes K, Shankar A. 2013. The association between PFOA, PFOS and serum lipid levels in adolescents. Chemosphere.

Geiger SD, Xiao J, Shankar A. 2013. Positive association between perfluoroalkyl chemicals and hyperuricemia in children. Am J Epidemiol 177: 1255-1262.

Gejerman G, Ciccone P, Goldstein M, Lanteri V, Schlecker B, Sanzone J, Esposito M, Rome S, Ciccone M, Margolis E, et al. 2017. US Preventive Services Task Force prostate-specific antigen screening guidelines result in higher Gleason score diagnoses. Investig Clin Urol 58: 423-428.

Ghazarian AA, Kelly SP, Altekruse SF, Rosenberg PS, McGlynn KA. 2017. Future of testicular germ cell tumor incidence in the United States: Forecast through 2026. Cancer 123: 2320-2328.

Ghisari M, Eiberg H, Long M, Bonefeld-Jorgensen EC. 2014. Polymorphisms in phase I and phase II genes and breast cancer risk and relations to persistent organic pollutant exposure: a case-control study in Inuit women. Environ Health 13: 19.

Gill J, Barakauskas VE, Thomas D, Rodriguez-Capote K, Higgins T, Zhang D, VanSpronsen A, Babenko O, Martindale R, Estey MP. 2017. Evaluation of thyroid test utilization through analysis of population-level data. Clin Chem Lab Med 55: 1898-1906.

Gillespie CD, Keenan NL, Miner JB, Hong Y. 2012. Screening for lipid disorders among adults--National Health and Nutrition Examination Survey, United States, 2005-2008. MMWR Suppl 61: 26-31.

Gleason JA, Post GB, Fagliano JA. 2015. Associations of perfluorinated chemical serum concentrations and biomarkers of liver function and uric acid in the US population (NHANES), 2007-2010. Environ Res 136c: 8-14.

Gorrochategui E, Lacorte S, Tauler R, Martin FL. 2016. Perfluoroalkylated Substance Effects in Xenopus laevis A6 Kidney Epithelial Cells Determined by ATR-FTIR Spectroscopy and Chemometric Analysis. Chem Res Toxicol 29: 924-932.

Grandjean P, Andersen EW, Budtz-Jorgensen E, Nielsen F, Molbak K, Weihe P, Heilmann C. 2012. Serum vaccine antibody concentrations in children exposed to perfluorinated compounds. JAMA 307: 391-397.

Grandjean P, Budtz-Jorgensen E. 2013. Immunotoxicity of perfluorinated alkylates: calculation of benchmark doses based on serum concentrations in children. Environ Health 12: 35.

Grandjean P, Heilmann C, Weihe P, Nielsen F, Mogensen UB, Budtz-Jorgensen E. 2016. Serum Vaccine Antibody Concentrations in Adolescents Exposed to Perfluorinated Compounds. Environ Health Perspect.

Grandjean P, Heilmann C, Weihe P, Nielsen F, Mogensen UB, Timmermann A, Budtz-Jorgensen E. 2017. Estimated exposures to perfluorinated compounds in infancy predict attenuated vaccine antibody concentrations at age 5-years. J Immunotoxicol 14: 188-195.

Granum B, Haug LS, Namork E, Stolevik SB, Thomsen C, Aaberge IS, van Loveren H, Lovik M, Nygaard UC. 2013. Pre-natal exposure to perfluoroalkyl substances may be associated with altered vaccine antibody levels and immune-related health outcomes in early childhood. J Immunotoxicol 10: 373-379.

Gross B, Pawlak M, Lefebvre P, Staels B. 2017. PPARs in obesity-induced T2DM, dyslipidaemia and NAFLD. Nat Rev Endocrinol 13: 36-49.

Grossman DC, Bibbins-Domingo K, Curry SJ, Barry MJ, Davidson KW, Doubeni CA, Epling JW, Jr., Kemper AR, Krist AH, Kurth AE, et al. 2017. Screening for Obesity in Children and Adolescents: US Preventive Services Task Force Recommendation Statement. Jama 317: 2417-2426.

Halsne R, Tandberg JI, Lobert VH, Ostby GC, Thoen E, Ropstad E, Verhaegen S. 2016. Effects of perfluorinated alkyl acids on cellular responses of MCF-10A mammary epithelial cells in monolayers and on acini formation in vitro. Toxicol Lett 259: 95-107.

Hamm MP, Cherry NM, Chan E, Martin JW, Burstyn I. 2010. Maternal exposure to perfluorinated acids and fetal growth. J Expo Sci Environ Epidemiol 20: 589-597.

Hardell E, Karrman A, van Bavel B, Bao J, Carlberg M, Hardell L. 2013. Case-control study on perfluorinated alkyl acids (PFAAs) and the risk of prostate cancer. Environ Int 63C: 35-39.

Hardell E, Karrman A, van Bavel B, Bao J, Carlberg M, Hardell L. 2014. Case-control study on perfluorinated alkyl acids (PFAAs) and the risk of prostate cancer. Environ Int 63: 35-39.

Huang Q, Yu J, Zhang X, Liu S, Ge Y. 2016. Association of the serum uric acid level with liver histology in biopsy-proven non-alcoholic fatty liver disease. Biomed Rep 5: 188-192.

Hui Z, Li R, Chen L. 2017. The impact of exposure to environmental contaminant on hepatocellular lipid metabolism. Gene 622: 67-71.

Humblet O, Diaz-Ramirez LG, Balmes JR, Pinney SM, Hiatt RA. 2014. Perfluoroalkyl chemicals and asthma among children 12-19 years of age: NHANES (1999-2008). Environ Health Perspect 122: 1129-1133.

Impinen A, Nygaard UC, Lodrup Carlsen KC, Mowinckel P, Carlsen KH, Haug LS, Granum B. 2017. Prenatal exposure to perfluoralkyl substances (PFASs) associated with respiratory tract infections but not allergy- and asthma-related health outcomes in childhood. Environ Res.

Innes KE, Ducatman AM, Luster MI, Shankar A. 2011. Association of osteoarthritis with serum levels of the environmental contaminants perfluorooctanoate and perfluorooctane sulfonate in a large Appalachian population. Am J Epidemiol 174: 440-450.

Jaruvongvanich V, Ahuja W, Wirunsawanya K, Wijarnpreecha K, Ungprasert P. 2017. Hyperuricemia is associated with nonalcoholic fatty liver disease activity score in patients with nonalcoholic fatty liver disease: a systematic review and meta-analysis. Eur J Gastroenterol Hepatol 29: 1031-1035.

Kang JS, Choi JS, Park JW. 2016. Transcriptional changes in steroidogenesis by perfluoroalkyl acids (PFOA and PFOS) regulate the synthesis of sex hormones in H295R cells. Chemosphere 155: 436-443.

Kataria A, Trachtman H, Malaga-Dieguez L, Trasande L. 2015. Association between perfluoroalkyl acids and kidney function in a cross-sectional study of adolescents. Environ Health 14: 89.

Kato K, Wong LY, Chen A, Dunbar C, Webster GM, Lanphear BP, Calafat AM. 2014. Changes in Serum Concentrations of Maternal Poly- and Perfluoroalkyl Substances over the Course of Pregnancy and Predictors of Exposure in a Multiethnic Cohort of Cincinnati, Ohio Pregnant Women during 2003-2006. Environ Sci Technol 48: 9600-9608.

Kennedy GL, Jr., Butenhoff JL, Olsen GW, O'Connor JC, Seacat AM, Perkins RG, Biegel LB, Murphy SR, Farrar DG. 2004. The toxicology of perfluorooctanoate. Crit Rev Toxicol 34: 351-384.

Khalil N, Chen A, Lee M, Czerwinski SA, Ebert JR, DeWitt JC, Kannan K. 2016. Association of Perfluoroalkyl Substances, Bone Mineral Density, and Osteoporosis in the U.S. Population in NHANES 2009-2010. Environ Health Perspect 124: 81-87.

Kielsen K, Shamim Z, Ryder LP, Nielsen F, Grandjean P, Budtz-Jorgensen E, Heilmann C. 2016. Antibody response to booster vaccination with tetanus and diphtheria in adults exposed to perfluorinated alkylates. J Immunotoxicol 13: 270-273.

Kim S, Choi K, Ji K, Seo J, Kho Y, Park J, Kim S, Park S, Hwang I, Jeon J, et al. 2011. Trans-placental transfer of thirteen perfluorinated compounds and relations with fetal thyroid hormones. Environ Sci Technol 45: 7465-7472.

Kim DH, Kim UJ, Kim HY, Choi SD, Oh JE. 2016. Perfluoroalkyl substances in serum from South Korean infants with congenital hypothyroidism and healthy infants--Its relationship with thyroid hormones. Environ Res 147: 399-404.

Kishi R, Nakajima T, Goudarzi H, Kobayashi S, Sasaki S, Okada E, Miyashita C, Itoh S, Araki A, Ikeno T, et al. 2015. The Association of Prenatal Exposure to Perfluorinated Chemicals with Maternal Essential and Long-Chain Polyunsaturated Fatty Acids during Pregnancy and the Birth Weight of Their Offspring: The Hokkaido Study. Environ Health Perspect 123: 1038-1045.

Kjeldsen LS, Bonefeld-Jorgensen EC. 2013. Perfluorinated compounds affect the function of sex hormone receptors. Environ Sci Pollut Res Int 20: 8031-8044.

Klaunig JE, Hocevar BA, Kamendulis LM. 2012. Mode of Action analysis of perfluorooctanoic acid (PFOA) tumorigenicity and Human Relevance. Reprod Toxicol 33: 410-418.

Kobayashi N, Kumada T, Toyoda H, Tada T, Ito T, Kage M, Okanoue T, Kudo M. 2017. Ability of Cytokeratin-18 Fragments and FIB-4 Index to Diagnose Overall and Mild Fibrosis Nonalcoholic Steatohepatitis in Japanese Nonalcoholic Fatty Liver Disease Patients. Dig Dis 35: 521-530.

Koshy TT, Attina TM, Ghassabian A, Gilbert J, Burdine LK, Marmor M, Honda M, Chu DB, Han X, Shao Y, et al. 2017. Serum perfluoroalkyl substances and cardiometabolic consequences in adolescents exposed to the World Trade Center disaster and a matched comparison group. Environ Int 109: 128-135.

Koskela A, Finnila MA, Korkalainen M, Spulber S, Koponen J, Hakansson H, Tuukkanen J, Viluksela M. 2016. Effects of developmental exposure to perfluorooctanoic acid (PFOA) on long bone morphology and bone cell differentiation. Toxicol Appl Pharmacol 301: 14-21.

Kvist L, Giwercman YL, Jonsson BA, Lindh CH, Bonde JP, Toft G, Strucinski P, Pedersen HS, Zvyezday V, Giwercman A. 2012. Serum levels of perfluorinated compounds and sperm Y:X chromosome ratio in two European populations and in Inuit from Greenland. Reprod Toxicol 34: 644-650.

La Rocca C, Tait S, Guerranti C, Busani L, Ciardo F, Bergamasco B, Perra G, Mancini FR, Marci R, Bordi G, et al. 2015. Exposure to Endocrine Disruptors and Nuclear Receptors Gene Expression in Infertile and Fertile Men from Italian Areas with Different Environmental Features. Int J Environ Res Public Health 12: 12426-12445.

Lee JW, Lee JW, Kim K, Shin YJ, Kim J, Kim S, Kim H, Kim P, Park K. 2017. PFOA-induced metabolism disturbance and multi-generational reproductive toxicity in Oryzias latipes. J Hazard Mater 340: 231-240.

Lee YJ, Kim MK, Bae J, Yang JH. 2013. Concentrations of perfluoroalkyl compounds in maternal and umbilical cord sera and birth outcomes in Korea. Chemosphere 90: 1603-1609.

LeFevre ML. 2015. Screening for thyroid dysfunction: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med 162: 641-650.

Lin CY, Lin LY, Chiang CK, Wang WJ, Su YN, Hung KY, Chen PC. 2010. Investigation of the associations between low-dose serum perfluorinated chemicals and liver enzymes in US adults. Am J Gastroenterol 105: 1354-1363.

Lind L, Zethelius B, Salihovic S, van Bavel B, Lind PM. 2013. Circulating levels of perfluoroalkyl substances and prevalent diabetes in the elderly. Diabetologia.

Liu W, Yang B, Wu L, Zou W, Pan X, Zou T, Liu F, Xia L, Wang X, Zhang D. 2014. Involvement of NRF2 in Perfluorooctanoic Acid-Indued Testicular Damage in Male Mice. Biol Reprod 93(2): 41.

Lo B, Prosberg MV, Gluud LL, Chan W, Leong RW, van der List E, van der Have M, Sarter H, Gower-Rousseau C, Peyrin-Biroulet L, et al. 2017. Systematic review and meta-analysis: assessment of factors affecting disability in inflammatory bowel disease and the reliability of the inflammatory bowel disease disability index. Aliment Pharmacol Ther.

Looker C, Luster MI, Calafat AM, Johnson VJ, Burleson GR, Burleson FG, Fletcher T. 2014. Influenza vaccine response in adults exposed to perfluorooctanoate and perfluorooctanesulfonate. Toxicol Sci 138: 76-88.

Lopez-Espinosa MJ, Mondal D, Armstrong B, Bloom MS, Fletcher T. 2012. Thyroid function and perfluoroalkyl acids in children living near a chemical plant. Environ Health Perspect 120: 1036-1041.

Louis GM, Chen Z, Schisterman EF, Kim S, Sweeney AM, Sundaram R, Lynch CD, Gore-Langton RE, Barr DB. 2015. Perfluorochemicals and human semen quality: the LIFE study. Environ Health Perspect 123: 57-63.

Louis GM, Peterson CM, Chen Z, Hediger ML, Croughan MS, Sundaram R, Stanford JB, Fujimoto VY, Varner MW, Giudice LC, et al. 2012. Perfluorochemicals and endometriosis: the ENDO study. Epidemiology 23: 799-805.

Lozano P, Henrikson NB, Morrison CC, Dunn J, Nguyen M, Blasi PR, Whitlock EP. 2016. Lipid Screening in Childhood and Adolescence for Detection of Multifactorial Dyslipidemia: Evidence Report and Systematic Review for the US Preventive Services Task Force. Jama 316: 634-644.

Lundin JI, Alexander BH, Olsen GW, Church TR. 2009. Ammonium perfluorooctanoate production and occupational mortality. Epidemiology 20: 921-928.

Maisonet M, Nayha S, Lawlor DA, Marcus M. 2015. Prenatal exposures to perfluoroalkyl acids and serum lipids at ages 7 and 15 in females. Environ Int 82: 49-60.

Maisonet M, Terrell ML, McGeehin MA, Christensen KY, Holmes A, Calafat AM, Marcus M. 2012. Maternal concentrations of polyfluoroalkyl compounds during pregnancy and fetal and postnatal growth in British girls. Environ Health Perspect 120: 1432-1437.

Manzano-Salgado CB, Casas M, Lopez-Espinosa MJ, Ballester F, Basterrechea M, Grimalt JO, Jimenez AM, Kraus T, Schettgen T, Sunyer J, et al. 2015. Transfer of perfluoroalkyl substances from mother to fetus in a Spanish birth cohort. Environ Res 142: 471-478.

Mashayekhi V, Tehrani KH, Hashemzaei M, Tabrizian K, Shahraki J, Hosseini MJ. 2015. Mechanistic approach for the toxic effects of perfluorooctanoic acid on isolated rat liver and brain mitochondria. Hum Exp Toxicol 34: 985-996.

Matilla-Santander N, Valvi D, Lopez-Espinosa MJ, Manzano-Salgado CB, Ballester F, Ibarluzea J, Santa-Marina L, Schettgen T, Guxens M, Sunyer J, et al. 2017. Exposure to Perfluoroalkyl

Substances and Metabolic Outcomes in Pregnant Women: Evidence from the Spanish INMA Birth Cohorts. Environ Health Perspect 125: 117004.

Melzer D, Rice N, Depledge MH, Henley WE, Galloway TS. 2010. Association between serum perfluorooctanoic acid (PFOA) and thyroid disease in the U.S. National Health and Nutrition Examination Survey. Environ Health Perspect 118: 686-692.

Mogensen UB, Grandjean P, Heilmann C, Nielsen F, Weihe P, Budtz-Jorgensen E. 2015. Structural equation modeling of immunotoxicity associated with exposure to perfluorinated alkylates. Environ Health 14: 47.

Moyer VA. 2012. Screening for prostate cancer: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med 157: 120-134.

Nelson AE, Allen KD, Golightly YM, Goode AP, Jordan JM. 2014. A systematic review of recommendations and guidelines for the management of osteoarthritis: The chronic osteoarthritis management initiative of the U.S. bone and joint initiative. Semin Arthritis Rheum 43: 701-712.

Nelson JW, Hatch EE, Webster TF. 2010. Exposure to polyfluoroalkyl chemicals and cholesterol, body weight, and insulin resistance in the general U.S. population. Environ Health Perspect 118: 197-202.

Nemes K, Aberg F. 2017. Interpreting lipoproteins in nonalcoholic fatty liver disease. Curr Opin Lipidol 28: 355-360.

Ngueta G, Longnecker MP, Yoon M, Ruark CD, Clewell HJR, Andersen ME, Verner MA. 2017. Quantitative bias analysis of a reported association between perfluoroalkyl substances (PFAS) and endometriosis: The influence of oral contraceptive use. Environ Int 104: 118-121.

Oliveira SB, Monteiro IM. 2017. Diagnosis and management of inflammatory bowel disease in children. Bmj 357: j2083.

Papadopoulou E, Sabaredzovic A, Namork E, Nygaard UC, Granum B, Haug LS. 2016. Exposure of Norwegian toddlers to perfluoroalkyl substances (PFAS): The association with breastfeeding and maternal PFAS concentrations. Environ Int 94: 687-694.

Peng S, Yan L, Zhang J, Wang Z, Tian M, Shen H. 2013. An integrated metabonomics and transcriptomics approach to understanding metabolic pathway disturbance induced by perfluorooctanoic acid. J Pharm Biomed Anal 86: 56-64.

Pennings JL, Jennen DG, Nygaard UC, Namork E, Haug LS, van Loveren H, Granum B. 2016. Cord blood gene expression supports that prenatal exposure to perfluoroalkyl substances causes depressed immune functionality in early childhood. J Immunotoxicol 13: 173-180.

Pirali B, Negri S, Chytiris S, Perissi A, Villani L, La Manna L, Cottica D, Ferrari M, Imbriani M, Rotondi M, et al. 2009. Perfluorooctane sulfonate and perfluorooctanoic acid in surgical thyroid specimens of patients with thyroid diseases. Thyroid 19: 1407-1412.

Qaseem A, Snow V, Shekelle P, Hopkins R, Jr., Forciea MA, Owens DK. 2008. Screening for osteoporosis in men: a clinical practice guideline from the American College of Physicians. Ann Intern Med 148: 680-684.

Qazi MR, Abedi MR, Nelson BD, DePierre JW, Abedi-Valugerdi M. 2010. Dietary exposure to perfluorooctanoate or perfluorooctane sulfonate induces hypertrophy in centrilobular hepatocytes and alters the hepatic immune status in mice. Int Immunopharmacol 10: 1420-1427.

Qazi MR, Hassan M, Nelson BD, Depierre JW, Abedi-Valugerdi M. 2013. Sub-acute, moderate-dose, but not short-term, low-dose dietary pre-exposure of mice to perfluorooctanoate aggravates concanavalin A-induced hepatitis. Toxicol Lett 219: 1-7.

Qian Y, Ducatman A, Ward R, Leonard S, Bukowski V, Lan Guo N, Shi X, Vallyathan V, Castranova V. 2010. Perfluorooctane sulfonate (PFOS) induces reactive oxygen species (ROS) production in human microvascular endothelial cells: role in endothelial permeability. J Toxicol Environ Health A 73: 819-836.

Qin XD, Qian Z, Vaughn MG, Huang J, Ward P, Zeng XW, Zhou Y, Zhu Y, Yuan P, Li M, et al. 2016. Positive associations of serum perfluoroalkyl substances with uric acid and hyperuricemia in children from Taiwan. Environ Pollut 212: 519-524.

Qin XD, Qian ZM, Dharmage SC, Perret J, Geiger SD, Rigdon SE, Howard S, Zeng XW, Hu LW, Yang BY, et al. 2017. Association of perfluoroalkyl substances exposure with impaired lung function in children. Environ Res 155: 15-21.

Rockwell CE, Turley AE, Cheng X, Fields PE, Klaassen CD. 2017. Persistent alterations in immune cell populations and function from a single dose of perfluorononanoic acid (PFNA) in C57Bl/6 mice. Food Chem Toxicol 100: 24-33.

Romano ME, Xu Y, Calafat AM, Yolton K, Chen A, Webster GM, Eliot MN, Howard CR, Lanphear BP, Braun JM. 2016. Maternal serum perfluoroalkyl substances during pregnancy and duration of breastfeeding. Environ Res 149: 239-246.

Rosen MB, Das KP, Rooney J, Abbott B, Lau C, Corton JC. 2017. PPARalpha-independent transcriptional targets of perfluoroalkyl acids revealed by transcript profiling. Toxicology 387: 95-107.

Rovito MJ, Manjelievskaia J, Leone JE, Lutz MJ, Nangia A. 2016. From 'D' to 'I': A critique of the current United States preventive services task force recommendation for testicular cancer screening. Prev Med Rep 3: 361-366.

Rugge JB, Bougatsos C, Chou R. 2014. U.S. Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence Reviews. Screening for and Treatment of Thyroid Dysfunction: An Evidence Review for the US Preventive Services Task Force Rockville (MD): Agency for Healthcare Research and Quality (US).

Ryu MH, Jha A, Ojo OO, Mahood TH, Basu S, Detillieux KA, Nikoobakht N, Wong CS, Loewen M, Becker AB, et al. 2014. Chronic exposure to perfluorinated compounds: Impact on airway hyperresponsiveness and inflammation. Am J Physiol Lung Cell Mol Physiol 307: L765-774.

Sakr CJ, Kreckmann KH, Green JW, Gillies PJ, Reynolds JL, Leonard RC. 2007. Cross-sectional study of lipids and liver enzymes related to a serum biomarker of exposure (ammonium perfluorooctanoate or APFO) as part of a general health survey in a cohort of occupationally exposed workers. J Occup Environ Med 49: 1086-1096.

Samuel VT, Shulman GI. 2017. Nonalcoholic Fatty Liver Disease as a Nexus of Metabolic and Hepatic Diseases. Cell Metab.

Savitz DA, Stein CR, Elston B, Wellenius GA, Bartell SM, Shin HM, Vieira VM, Fletcher T. 2012. Relationship of perfluorooctanoic acid exposure to pregnancy outcome based on birth records in the mid-Ohio Valley. Environ Health Perspect 120: 1201-1207.

Shankar A, Xiao J, Ducatman A. 2011. Perfluoroalkyl chemicals and elevated serum uric acid in US adults. Clin Epidemiol 3: 251-258.

Singh TS, Lee S, Kim HH, Choi JK, Kim SH. 2012. Perfluorooctanoic acid induces mast cell-mediated allergic inflammation by the release of histamine and inflammatory mediators. Toxicol Lett 210: 64-70.

Skuladottir M, Ramel A, Rytter D, Haug LS, Sabaredzovic A, Bech BH, Henriksen TB, Olsen SF, Halldorsson TI. 2015. Examining confounding by diet in the association between perfluoroalkyl acids and serum cholesterol in pregnancy. Environ Res 143: 33-38.

Smit LA, Lenters V, Hoyer BB, Lindh CH, Pedersen HS, Liermontova I, Jonsson BA, Piersma AH, Bonde JP, Toft G, et al. 2015. Prenatal exposure to environmental chemical contaminants and asthma and eczema in school-age children. Allergy 70: 653-660.

Sohler N, Matti-Orozco B, Young E, Li X, Gregg EW, Ali MK, Bullard KM, Albu JB. 2016. OPPORTUNISTIC SCREENING FOR DIABETES AND PREDIABETES USING HEMOGLOBIN A1C IN AN URBAN PRIMARY CARE SETTING. Endocr Pract 22: 143-150.

Song P, Yu J, Wang M, Chang X, Wang J, An L. 2017. Prevalence and Correlates of Suspected Nonalcoholic Fatty Liver Disease in Chinese Children. Int J Environ Res Public Health 14.

Sonthithai P, Suriyo T, Thiantanawat A, Watcharasit P, Ruchirawat M, Satayavivad J. 2016. Perfluorinated chemicals, PFOS and PFOA, enhance the estrogenic effects of 17beta-estradiol in T47D human breast cancer cells. J Appl Toxicol 36: 790-801.

Stamp L, Dalbeth N. 2014. Screening for hyperuricaemia and gout: a perspective and research agenda. Nat Rev Rheumatol 10: 752-756.

Starling AP, Adgate JL, Hamman RF, Kechris K, Calafat AM, Ye X, Dabelea D. 2017. Perfluoroalkyl Substances during Pregnancy and Offspring Weight and Adiposity at Birth: Examining Mediation by Maternal Fasting Glucose in the Healthy Start Study. Environ Health Perspect 125: 067016.

Starling AP, Engel SM, Whitworth KW, Richardson DB, Stuebe AM, Daniels JL, Haug LS, Eggesbo M, Becher G, Sabaredzovic A, et al. 2013. Perfluoroalkyl substances and lipid concentrations in plasma during pregnancy among women in the Norwegian Mother and Child Cohort Study. Environ Int 62C: 104-112.

Steenland K, Tinker S, Frisbee S, Ducatman A, Vaccarino V. 2009. Association of perfluorooctanoic acid and perfluorooctane sulfonate with serum lipids among adults living near a chemical plant. Am J Epidemiol 170: 1268-1278.

Steenland K, Tinker S, Shankar A, Ducatman A. 2010. Association of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) with uric acid among adults with elevated community exposure to PFOA. Environ Health Perspect 118: 229-233.

Steenland K, Woskie S. 2012. Cohort mortality study of workers exposed to perfluorooctanoic acid. Am J Epidemiol 176: 909-917.

Steenland K, Zhao L, Winquist A. 2015. A cohort incidence study of workers exposed to perfluorooctanoic acid (PFOA). Occup Environ Med 72: 373-380.

Steenland K, Zhao L, Winquist A, Parks C. 2013. Ulcerative colitis and perfluorooctanoic acid (PFOA) in a highly exposed population of community residents and workers in the mid-Ohio valley. Environ Health Perspect 121: 900-905.

Stein CR, Ge Y, Wolff MS, Ye X, Calafat AM, Kraus T, Moran TM. 2016. Perfluoroalkyl substance serum concentrations and immune response to FluMist vaccination among healthy adults. Environ Res 149: 171-178.

Stromqvist M, Olsson JA, Karrman A, Brunstrom B. 2012. Transcription of genes involved in fat metabolism in chicken embryos exposed to the peroxisome proliferator-activated receptor alpha (PPARalpha) agonist GW7647 or to perfluorooctane sulfonate (PFOS) or perfluorooctanoic acid (PFOA). Comp Biochem Physiol C Toxicol Pharmacol 156: 29-36.

Sweet PH, Khoo T, Nguyen S. 2017. Nonalcoholic Fatty Liver Disease. Prim Care 44: 599-607.

Tan X, Xie G, Sun X, Li Q, Zhong W, Qiao P, Sun X, Jia W, Zhou Z. 2013. High fat diet feeding exaggerates perfluorooctanoic acid-induced liver injury in mice via modulating multiple metabolic pathways. PLoS One 8: e61409.

Thomson G, Crossland N, Dykes F, Sutton CJ. 2012. UK Breastfeeding Helpline support: An investigation of influences upon satisfaction. BMC Pregnancy Childbirth 12: 150.

Timmermann CA, Budtz-Jorgensen E, Jensen TK, Osuna CE, Petersen MS, Steuerwald U, Nielsen F, Poulsen LK, Weihe P, Grandjean P. 2017. Association between perfluoroalkyl substance exposure and asthma and allergic disease in children as modified by MMR vaccination. J Immunotoxicol 14: 39-49.

Toft G, Jonsson BA, Bonde JP, Norgaard-Pedersen B, Hougaard DM, Cohen A, Lindh CH, Ivell R, Anand-Ivell R, Lindhard MS. 2016. Perfluorooctane Sulfonate Concentrations in Amniotic

Fluid, Biomarkers of Fetal Leydig Cell Function, and Cryptorchidism and Hypospadias in Danish Boys (1980-1996). Environ Health Perspect 124: 151-156.

Toft G, Jonsson BA, Lindh CH, Giwercman A, Spano M, Heederik D, Lenters V, Vermeulen R, Rylander L, Pedersen HS, et al. 2012. Exposure to perfluorinated compounds and human semen quality in Arctic and European populations. Hum Reprod 27: 2532-2540.

Uhl SA, James-Todd T, Bell ML. 2013. Association of Osteoarthritis with Perfluorooctanoate and Perfluorooctane Sulfonate in NHANES 2003-2008. Environ Health Perspect 121: 447-452, 452e441-443.

Vested A, Ramlau-Hansen CH, Olsen SF, Bonde JP, Kristensen SL, Halldorsson TI, Becher G, Haug LS, Ernst EH, Toft G. 2013. Associations of in utero exposure to perfluorinated alkyl acids with human semen quality and reproductive hormones in adult men. Environ Health Perspect 121: 453-458, 458e451-455.

Vieira VM, Hoffman K, Shin HM, Weinberg JM, Webster TF, Fletcher T. 2013. Perfluorooctanoic acid exposure and cancer outcomes in a contaminated community: a geographic analysis. Environ Health Perspect 121: 318-323.

Wang J, Wang X, Sheng N, Zhou X, Cui R, Zhang H, Dai J. 2017. RNA-sequencing analysis reveals the hepatotoxic mechanism of perfluoroalkyl alternatives, HFPO2 and HFPO4, following exposure in mice. J Appl Toxicol 37: 436-444.

Wang L, Wang Y, Liang Y, Li J, Liu Y, Zhang J, Zhang A, Fu J, Jiang G. 2013. Specific accumulation of lipid droplets in hepatocyte nuclei of PFOA-exposed BALB/c mice. Sci Rep 3: 2174.

Wang, H, Wei Y, Kong X, Xu D. 2013. Effects of urate-lowering therapy in hyperuricemia on slowing the progression of renal function: a meta-analysis. Journal of Renal Nutrition 23(5): 389-396.

Wang L, Wang Y, Liang Y, Li J, Liu Y, Zhang J, Zhang A, Fu J, Jiang G. 2014. PFOS induced lipid metabolism disturbances in BALB/c mice through inhibition of low density lipoproteins excretion. Sci Rep 4: 4582.

Washino N, Saijo Y, Sasaki S, Kato S, Ban S, Konishi K, Ito R, Nakata A, Iwasaki Y, Saito K, et al. 2009. Correlations between prenatal exposure to perfluorinated chemicals and reduced fetal growth. Environ Health Perspect 117: 660-667.

Webster GM, Venners SA, Mattman A, Martin JW. 2014. Associations between Perfluoroalkyl acids (PFASs) and maternal thyroid hormones in early pregnancy: a population-based cohort study. Environ Res 133: 338-347.

White SS, Fenton SE, Hines EP. 2011. Endocrine disrupting properties of perfluorooctanoic acid. J Steroid Biochem Mol Biol 127: 16-26.

Wielsoe M, Kern P, Bonefeld-Jorgensen EC. 2017. Serum levels of environmental pollutants is a risk factor for breast cancer in Inuit: a case control study. Environ Health 16: 56.

Wijarnpreecha K, Panjawatanan P, Lekuthai N, Thongprayoon C, Cheungpasitporn W, Ungprasert P. 2017. Hyperuricaemia and risk of nonalcoholic fatty liver disease: A meta-analysis. Liver Int 37: 906-918.

Williams CD, Stengel J, Asike MI, Torres DM, Shaw J, Contreras M, Landt CL, Harrison SA. 2011. Prevalence of nonalcoholic fatty liver disease and nonalcoholic steatohepatitis among a largely middle-aged population utilizing ultrasound and liver biopsy: a prospective study. Gastroenterology 140: 124-131.

Williams GR, Bassett JHD. 2017. Thyroid diseases and bone health. J Endocrinol Invest.

Winquist A, Steenland K. 2014. Modeled PFOA exposure and coronary artery disease, hypertension, and high cholesterol in community and worker cohorts. Environ Health Perspect 122: 1299-1305.

Winquist A, Steenland K. 2014. Perfluorooctanoic acid exposure and thyroid disease in community and worker cohorts. Epidemiology 25: 255-264.

Wolf DC, Moore T, Abbott BD, Rosen MB, Das KP, Zehr RD, Lindstrom AB, Strynar MJ, Lau C. 2008. Comparative hepatic effects of perfluorooctanoic acid and WY 14,643 in PPAR-alpha knockout and wild-type mice. Toxicol Pathol 36: 632-639.

Wu G, Li H, Fang Q, Zhang J, Zhang M, Zhang L, Wu L, Hou X, Lu J, Bao Y, et al. 2017. Complementary Role of Fibroblast Growth Factor 21 and Cytokeratin 18 in Monitoring the Different Stages of Nonalcoholic Fatty Liver Disease. Sci Rep 7: 5095.

Wu X, Liang M, Yang Z, Su M, Yang B. 2017. Effect of acute exposure to PFOA on mouse liver cells in vivo and in vitro. Environ Sci Pollut Res Int 24: 24201-24206.

Yamaguchi M, Arisawa K, Uemura H, Katsuura-Kamano S, Takami H, Sawachika F, Nakamoto M, Juta T, Toda E, Mori K, et al. 2013. Consumption of seafood, serum liver enzymes, and blood levels of PFOS and PFOA in the Japanese population. J Occup Health 55: 184-194.

Yan S, Zhang H, Guo X, Wang J, Dai J. 2017. High perfluorooctanoic acid exposure induces autophagy blockage and disturbs intracellular vesicle fusion in the liver. Arch Toxicol 91: 247-258.

Yan S, Zhang H, Wang J, Zheng F, Dai J. 2015. Perfluorooctanoic acid exposure induces endoplasmic reticulum stress in the liver and its effects are ameliorated by 4-phenylbutyrate. Free Radic Biol Med 87: 300-311.

Yang B, Zou W, Hu Z, Liu F, Zhou L, Yang S, Kuang H, Wu L, Wei J, Wang J, et al. 2014. Involvement of oxidative stress and inflammation in liver injury caused by perfluorooctanoic acid exposure in mice. Biomed Res Int 2014: 409837.

Yang L, Li J, Lai J, Luan H, Cai Z, Wang Y, Zhao Y, Wu Y. 2016. Placental Transfer of Perfluoroalkyl Substances and Associations with Thyroid Hormones: Beijing Prenatal Exposure Study. Sci Rep 6: 21699.

Yang Y, Lv QY, Guo LH, Wan B, Ren XM, Shi YL, Cai YQ. 2017. Identification of protein tyrosine phosphatase SHP-2 as a new target of perfluoroalkyl acids in HepG2 cells. Arch Toxicol 91: 1697-1707.

Yki-Jarvinen H. 2016. Diagnosis of non-alcoholic fatty liver disease (NAFLD). Diabetologia 59: 1104-1111.

Yu N, Wei S, Li M, Yang J, Li K, Jin L, Xie Y, Giesy JP, Zhang X, Yu H. 2016. Effects of Perfluorooctanoic Acid on Metabolic Profiles in Brain and Liver of Mouse Revealed by a High-throughput Targeted Metabolomics Approach. Sci Rep 6: 23963.

Zeng XW, Qian Z, Emo B, Vaughn M, Bao J, Qin XD, Zhu Y, Li J, Lee YL, Dong GH. 2015. Association of polyfluoroalkyl chemical exposure with serum lipids in children. Sci Total Environ 512-513: 364-370.

Zhang H, Cui R, Guo X, Hu J, Dai J. 2016. Low dose perfluorooctanoate exposure promotes cell proliferation in a human non-tumor liver cell line. J Hazard Mater 313: 18-28.

Zhang H, Lu Y, Luo B, Yan S, Guo X, Dai J. 2014. Proteomic analysis of mouse testis reveals perfluorooctanoic acid-induced reproductive dysfunction via direct disturbance of testicular steroidogenic machinery. J Proteome Res 13: 3370-3385.

Zhao B, Lian Q, Chu Y, Hardy DO, Li XK, Ge RS. 2011. The inhibition of human and rat 11beta-hydroxysteroid dehydrogenase 2 by perfluoroalkylated substances. J Steroid Biochem Mol Biol 125: 143-147.

Zheng F, Sheng N, Zhang H, Yan S, Zhang J, Wang J. 2017. Perfluorooctanoic acid exposure disturbs glucose metabolism in mouse liver. Toxicol Appl Pharmacol 335: 41-48.

Zhou Y, Bao WW, Qian ZM, Dee Geiger S, Parrish KL, Yang BY, Lee YL, Dong GH. 2017. Perfluoroalkyl substance exposure and urine CC16 levels among asthmatics: A case-control study of children. Environ Res 159: 158-163.

Zhu Y, Qin XD, Zeng XW, Paul G, Morawska L, Su MW, Tsai CH, Wang SQ, Lee YL, Dong GH. 2016. Associations of serum perfluoroalkyl acid levels with T-helper cell-specific cytokines in children: By gender and asthma status. Sci Total Environ 559: 166-173.

Zhuo X, Zhang P, Selvin E, Hoerger TJ, Ackermann RT, Li R, Bullard KM, Gregg EW. 2012. Alternative HbA1c cutoffs to identify high-risk adults for diabetes prevention: a cost-effectiveness perspective. Am J Prev Med 42: 374-381.

REPORT OF ALAN DUCATMAN, M.D.
In the case of Sullivan, et. al. v. Saint-Gobain Performance Plastics Company,
No. 5:16-cv-000125-GWC (D. Vt.)

Exhibit 3: Prior Testimony

Year	Case Name	Civil Action # (or claim #)	Court
2017	*Cooper vs Axiall LLC et al.*	*5:16-cv-00148*	*US Dist. Ct. for the Northern Dist. Of WV*
2017	*Estate of Carmella Cianni v HHS*	*16-1052-UNJ*	
2014	Parsons Chapman Oliver Greynolds v. Frontier & AFL	13-C-1478	Circuit Court of Kanawha County, WV
2014	Russell L. Evans v Equipment Transport LLC	WC390 C11523	PA Dept of Labor & Industry Bureau of WC
2014	Richard Burkhammer v. Pratt and Whitney 555-097-126	555-0971727	WC Office of Judges
2014	Jason Glover v. Pratt and Whitney 555-097-132	555-08132	WC Office of Judges
2014	Michael Linton v. Pratt and Whitney 555-097-194	555-097194	WC Office of Judges
2014	Bolyard v. First Energy	13-C-15	Circuit Court of Preston County, WV
2014	Murphy Gray & Sanson v. Ferrellgas	10-C-79	Circuit Court of Nicholas County, WV